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In Plain English

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BOOST SYSTEM PERFORMANCE

p.76 **USB vs. Firewire**

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Make Your PC Faster & More Stable

What's The Biggest, Fastest Hard Drive? p.17

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Web Statistics	✓	✓	✓
E-mail Newsletter Tool	✓	$10/month	$3.99/month
In2site Live Dialogue	✓	—	—
Chat Channels	✓	—	✓
Form Builder	✓	✓	—
NEW Click-n-Build Applications	5	—	—
Premium Software Suite	✓	—	—
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Volume 18 . August 2007 . Issue 8

THIS MONTH'S COVER STORY:

Improve System
Startup &
Shutdown

News & Notes

Reviews

Gateway
DX430X

August Web-Only Articles

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Hardware

For the best prices on the latest hardware, visit the Where To Buy area at SmartComputing.com (www.smartcomputing.com).

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Use Ruler Guides In Designs

Roxio PhotoSuite 7 Platinum
Version 7 Wrap-Up

Email
Manage Email In Thunderbird 2

Intuit Quicken Premier 2006
Financial Calculators

Broderbund Print Shop 20 Deluxe
Make Quick Color Changes
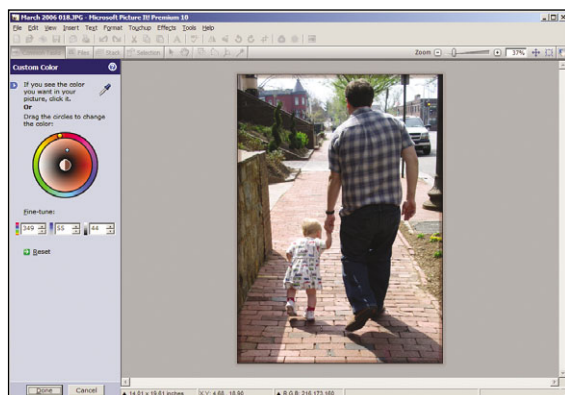
Corel Paint Shop Pro 9
Version 9 Favorite Tips & Tricks

Microsoft PowerPoint 2002
Finding Lost Information

Online
Track Your Clicks With Web History

Adobe Photoshop Elements
Pan & Zoom In Slide Shows

Microsoft Works 2005
Polishing Touches In Picture It!
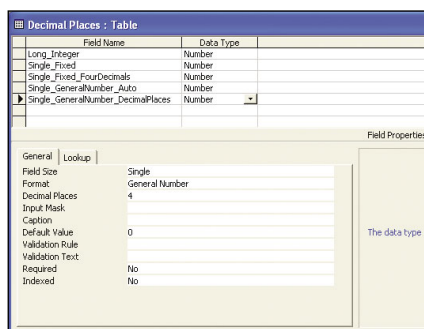
Microsoft Access 2002
Learn How Access Treats Decimal Places

HTML
Custom Text Spacing With CSS

Microsoft Works 2005

Microsoft Access 2002

Editor's Note

You'd think it would be simple: All you want to do is start up your computer. Or, alternatively, all you want to do is shut it down. How tough could it be?! On. Off. It's pretty straightforward. In fact, it's positively *binary*.

And yet, there's something about the startup and shutdown processes that often causes difficulty. Either you find that you have to wait three (or four or five) minutes for your system to boot up, or else you have to wait interminable minutes for it to shut down. (Or, even worse, your system never does actually shut down; it just hangs there, taunting you.)

Your computer hasn't always been this way. When it was new, it booted up almost instantly, and it shut down within seconds. It was a regular speed demon! What's happened? (And it's not just you, either. This is one of the most common complaints our tech support reps hear about when readers call in or email.)

Well, *lots* of things may have happened: viruses, spyware, adware, sloppy program installations (and worse yet, sloppy uninstallations), corrupted Registry entries. . . . The list is almost endless. But don't worry; we're here for you. This issue of *Smart Computing* will help you clean up your system and restore it to its former speedy glory.

ROD SCHER, PUBLICATION EDITOR

Now Available On Newsstands . . .

Computer Power User * Keep It Cool

Effective cooling is crucial in high-performance rigs, especially if there's overclocking going on. That's why this month the *CPU* Spotlight shines on cooling theory, hardware, and methods.

PC Today * Future Mobile Tech

Not that long ago, the mobile tech we now take for granted would have looked like the stuff of science fiction. Wireless and GPS technologies continue to change, so in this month's *PC Today* we examine what developers are promising compared to what manufacturers are likely to deliver.

First Glimpse * Networking Your Home

There has been much talk lately about home networks, and with the popularization of HDTVs, game consoles, and laptop computers, everyone can do it. But it can be intimidating, and you might not know where to begin to create one. In this month's issue of *First Glimpse*, we'll explain exactly what hardware and software you need, cover several different networking scenarios, and recommend networks based on your specific lifestyle.

Reference Series * All About Vista

Here's your complete guide to installing and using the latest version of Microsoft Windows. Learn how to use all the new features found in every "flavor" of Vista, set up the OS for networking, and share online resources. As an added bonus, the extensive troubleshooting section will help keep your system running smoothly.

DESKTOPS & LAPTOPS

Put The Top Down With Convertibles

In years past, notebook users and tablet PC users stood firmly on opposite sides of the tracks—notebook users on one side with their keyboards and pointing devices, and tablet PC users on the other side with their touchscreens and styli. Today, these two sides are increasingly coming together, thanks to an innovation called the convertible notebook.

Manufacturers have long understood that users of each of these devices aren't necessarily disparate in their needs and wants. In particular, people using the traditional slate-model tablet PCs often shell out extra bucks for a detachable keyboard that lets them avoid the toilsome task of on-screen typing. Notebook users—especially those who busy themselves with graphics work—must rely on only the pointing device or a mouse to handle on-screen drawing tasks.

The convertible notebook blends the traditional notebook form with that of a traditional tablet PC. At first glance, the convertible appears like any other notebook when open, but users can twist the display 180 degrees and lay the open monitor flat on the keyboard, creating a tablet PC.

One of the market's more popular models is the Gateway Convertible Notebook (starting at $1,099.99; www.gateway.com), which includes an Intel Core Duo T2350 processor, 1GB RAM, 80GB hard drive, CD-RW (CD-rewriteable)/DVD combo drive, integrated wireless, and Windows Vista Home Premium. Users can interact with the device's 14-inch TFT (thin film transistor) widescreen display using a full-sized, "executive" pen, and the display can switch from landscape to portrait mode with the touch of a button.

With all of their moving parts, one might assume that convertible notebooks are ripe for frequent malfunction, but Gateway and other manufacturers have worked to ensure that the display remains intact during movement. For example, Gateway built a magnesium superstructure and display frame for its notebook's skeleton—it even anchored the alloy display swivel in magnesium.

Other manufacturers are also moving into convertible territory. Acer's TravelMate C200 (starting at $1,399; us.acer.com) features an Intel Pentium M processor (up to 2.13GHz), integrated wireless, Nvidia GeForce Go 6200 graphics, 4-in-1 media card reader, and a high-contrast, 12.1-inch LCD. Lenovo is also in the game with its ThinkPad X Series Tablet models (starting around $1,500; www.lenovo.com), which includes an Intel Core Duo (up to 1.83GHz), CD-RW/DVD combo drive, integrated fingerprint reader, Windows Vista Business, and the built-in Active Protection System. The X Series includes a 12.1-inch XGA (Extended Graphics Array) display. ▌▌
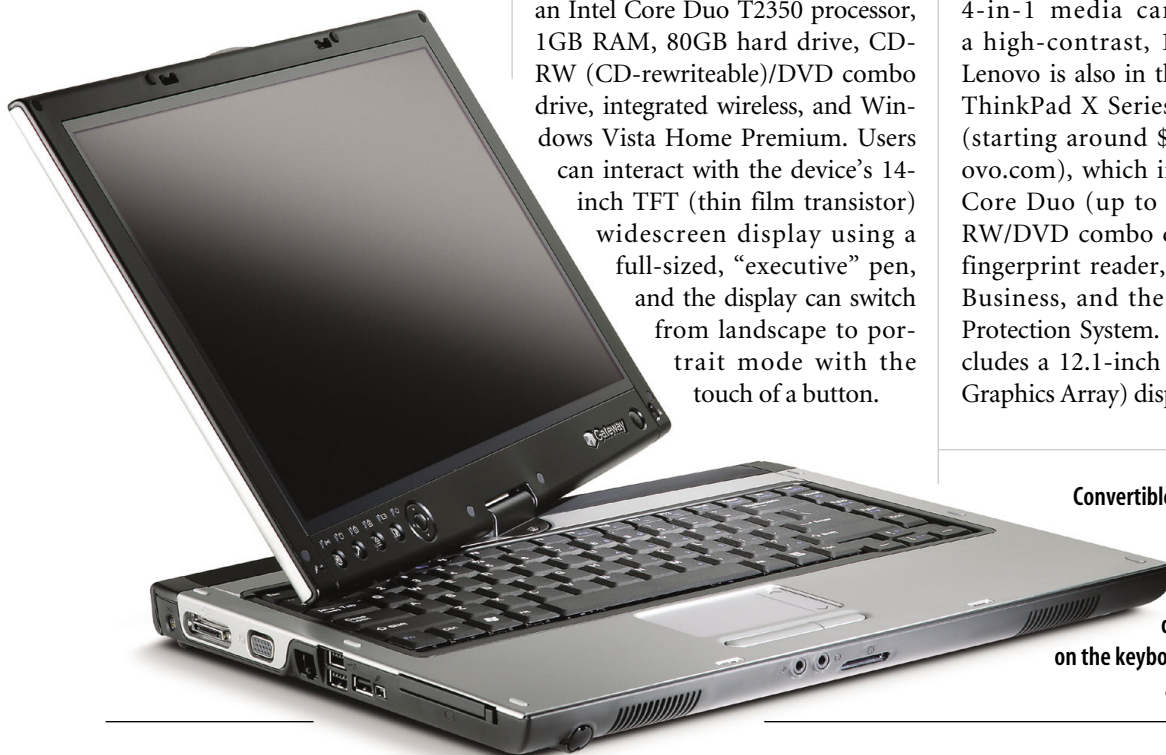
Convertible notebooks, such as this model from Gateway, allow users to flip the display and lay it flat on the keyboard, in turn creating an instant tablet PC.

STORAGE

Gauge Your Flash In A Flash

When you pack a suitcase, you need just a quick glance to determine how much space is left for additional belongings. USB flash drives, on the other hand, supply no such indication, unless you insert them into a computer and check the drive's properties to see how much room is left for additional data. Until now, that is.

Although they're already pretty darn convenient, USB flash drives are now even handier thanks to an innovation from Lexar (www.lexar.com) that displays the drive's capacity directly on the drive's face. The company's JumpDrive Secure II Plus features a thin, shatterproof display that graphs the drive's capacity in terms of used storage, and the 10-bar meter appears without the need for software drivers or administrative privileges.

Additionally, the drive boosts security along with convenience, with the inclusion of preloaded security software that lets users protect their data. For example, users can create multiple password-protected Encrypted Vaults that use 256-bit encryption. Also included is a file shredder function, which lets users securely delete files beyond restoration.

The drive is estimated to cost about $20 for the 512MB version. Other capacities will also be available, including 1GB, 2GB, 4GB, and 8GB. ▌

Lexar's USB flash drive, the JumpDrive Secure II Plus, features a capacity meter to show the available storage.

DISPLAYS

DisplayPort Set To Make Retail Splash

The confusion surrounding the wealth of competing display standards is set to escalate as DisplayPort, the new digital display interface approved last year, will soon appear in retail products.

As we reported in March, DisplayPort is a competitor to HDMI (High-Definition Multimedia Interface), but, unlike HDMI, it focuses on connections between computers and displays, or computers and home theaters, instead of various consumer multimedia components. Early DisplayPort supporters have included Intel, AMD, Dell, HP, Nvidia, Philips, Lenovo, and Samsung, and one of them recently confirmed that the standard will appear in its products this year.

Dell displayed an incredibly thin (about a half an inch) prototype LCD that uses DisplayPort, which features technology that accommodates thinner overall displays without losing other functions—both the audio and video signals are funneled through one DisplayPort cable. This advance comes thanks to the standard's elimination of bulky electronics previously required to convert video signals.

In addition to the slimming effect, the technology also supports up to four times the current resolutions delivered by HDTV and allows multiple monitors to be daisy-chained. Dell said it expects to release the new-fangled monitors later this year. ▌

Wrap A Mouse Around Your Finger

Imagine if you could ditch your mouse and just wave your hand around to control your on-screen cursor. This might seem more fitting for a science fiction movie, but thanks to an innovation devised by students at the Worcester Polytechnic Institute, it might eventually become mainstream reality.

WPI seniors Chris Banker, Mike Cretella, Jeff DiMaria, Jamie Mitchell, and Jeff Tucker didn't build a better mousetrap, but instead they built a better mouse—one that slips onto a finger and uses three dimensions to control items on a computer display. The students built the mouse as part of their Major Qualifying Project, which requires a significant design or research experience.
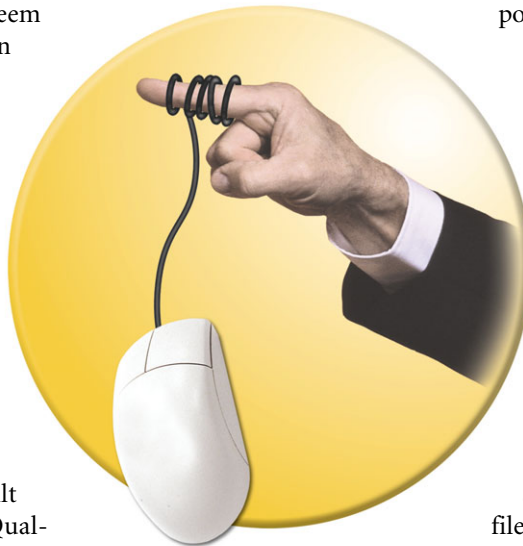
To use the mouse, a user simply slides the small, wireless, ring-like device on a finger and points at the screen, moving the finger to manipulate on-screen items. The user can zoom by moving the finger toward or away from the screen, allowing for full, 3D movement that the students say could prove useful in CAD (computer-aided design) applications, gaming, and even programs such as Google Earth.

"The mouse as we know it has been in use for over 40 years," said Jamie Mitchell, in a video explaining the innovation. "It is cumbersome [and] lies on a flat surface . . . our design of the low-profile, intuitive mouse that is wireless and can track in three dimensions virtually eliminates the need for the old mouse."

Puma Pounces On Mobile Chipset Competition

Plenty of excitement stirred over Intel's recent unveiling of its fourth-generation Centrino mobile platform, but AMD has countered with details of its own "Puma" mobile platform, which the company also is targeting to compete with Intel's "Santa Rosa" and "Montevina" platforms.

Intel's Core 2 Duo processor will see a new competitor in AMD's 65nm "Griffin" mobile processor, which features dual cores and blends performance with energy-saving technology. The Griffin uses a split power plane, which delivers independent voltages to the memory core and each processor core, and AMD also includes an improved DRAM (dynamic random-access memory) prefetcher in the Griffin's DDR2 (double-date-rate 2) memory controller. These advancements, along with dynamic performance scaling, will help to extend battery life.

Joining Griffin as part of the Puma platform will be the new RS780 notebook chipset, designed to improve performance and ramp up the overall mobile visual experience. Included with the chipset are DirectX 10 graphics processing on the motherboard; energy-efficient, high-definition multimedia support with the Unified Video Decoder; integrated multimonitor support with DVD, HDMI, and DisplayPort; Native southbridge support for NAND flash with HyperFlash; and Power-Xpress for dynamic switching between integrated and discrete graphics for extended battery life.

AMD Platform Strategy
Integration, Optimization and Exploitation

5	Fusion 2009
4	Platform specialization 2008 – Optimized multi-media and productivity platforms expected
3	System level optimization 2008 – Significant performance enhancement and power-saving improvements planned
2	CPU-GPU-chipset optimization 2007 – Boosted performance and power characteristics
1	Expanded technology partner ecosystem 2007 – Unprecedented partner support for AMD 690 Series

Looking ahead, AMD's mobile strategy focuses heavily on improving performance, lowering power requirements, and boosting the multimedia experience.

Study: Kids Online More Than Parents Think

A study from Webroot Software indicates that parents don't have much of a clue when it comes to their children's Internet habits.

According to the study, while more than 70% of surveyed children between the ages of 11 and 17 said they're asked by their parents about their online activities, 45% of them said they spend an average of three or more hours daily on the Internet, while 76% of parents said they believe their children spend an average of two hours or less.

The time discrepancy could be attributed to more time spent online doing homework, but the study points to data from the National Center for Education Statistics indicating that 61% of all 13-year-olds spend only one hour or less on homework. Perhaps more alarming is the study's discovery that while 71% of parents said their children never make online purchases, more than half of the children said they do.

The study also found that 43% of surveyed teens who use social networking sites reported that they received an invitation online in the past year to meet with a stranger. Almost 40% of children aged 11 to 17 said they received a sexually explicit email or pop-up advertisement within the past year. ❚
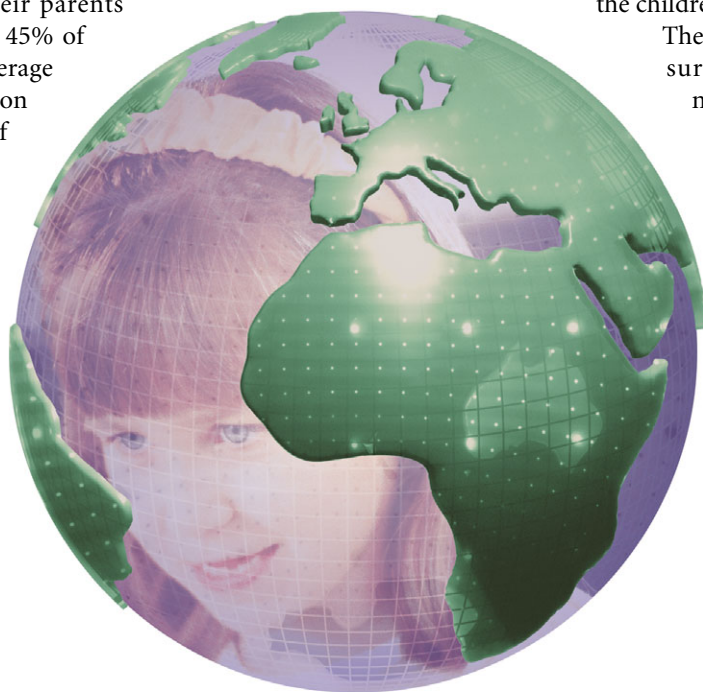
PROBLEM-SOLVER: TROUBLESHOOTING THE NEWS

My DVD drive no longer spins. Can this be fixed?

First, try replacing the data cable that connects the drive to the motherboard. If that doesn't help, and if the drive is under warranty, you should contact the seller to arrange for the drive's repair or replacement. If the warranty is expired, consider purchasing a new drive in lieu of repairing your existing drive, which could cost more than a new drive.

My VGA (Video Graphics Array)-connected LCD monitor's display is fuzzy.

If you're unable to use a DVI (Digital Visual Interface) connection with your LCD monitor, check the monitor's control for an auto adjustment feature, which can help to correct image fuzziness when using a VGA connection.

My mouse's pointer doesn't seem to move in a straight line.

If you're using an optical mouse, check the light hole underneath the mouse for any debris that can impede pointer tracking, such as hair. If you're still having problems, try reinstalling the mouse's drivers and the software included with the mouse.

My BIOS (Basic Input/Output System) is indicating that my newly installed RAM has errors.

Download Memtest86 from www.memtest.org, install it, and then run the program to determine if your BIOS is accurate in its claim that your memory has errors. If Memtest86 detects errors, return your faulty RAM to the seller for a replacement. ❚

Mobile Malware Spawns New Breed Of Protection

If you're tired of being lectured about the lack of security software on your desktop and laptop PCs, prepare yourself for a new wave of security-related condemnation. Security software has now moved to the realm of mobile devices, with major developers rolling out a range of products aimed at smartphones and other devices.

Symantec is now shipping two versions of security software designed for devices using Microsoft's Windows Mobile, including Norton Mobile Security for Smartphones ($49.95; for consumers) and Symantec Mobile Security 5.0 ($79.95; for enterprise users). The software includes antivirus, antispam, and firewall protection, as well as encryption features that can be used to protect data in case of theft.

The company also sells Mobile Security for Symbian, which protects Symbian-based devices available from manufacturers such as Nokia, Panasonic, Samsung, and others. This product features a built-in firewall; an antivirus component that detects and automatically removes viruses, Trojan horses, worms, and evolving malicious code; and an automatic protection component. Like antivirus software on the PC side, Symantec's software allows users to perform on-demand scanning.

Earlier this year, Kaspersky Lab released its own mobile security

Products such as Kaspersky's Anti-Virus Mobile provide antivirus and antispam protection on smartphones using mobile-focused technology.

software, called Anti-Virus Mobile ($29.95; www.kaspersky.com), for both Symbian- and Windows Mobile-powered devices. This product features on-demand scanning that requires just minutes to complete a scan, and users can choose to focus scanning only on memory cards or on individual files or folders. Infected items are stored in the software's quarantine folder or deleted.

On-access scanning is also included, allowing all incoming or modified SMS (Short Message Service), MMS (Multimedia Message Service), and email items to be automatically scanned for threats, and the component also keeps an eye on Bluetooth and other communication channels for incoming executable files. Like Symantec's offering, Kaspersky Anti-Virus Mobile features on-schedule scanning, which can be set to run antivirus scans at a predetermined time, and users can later view reports on suspected threats and decide which action to take, if any.

Antispam takes an interesting twist in Kaspersky's software, with support for SMS, EMS (Enhanced Message Service), and MMS that can block blacklisted telephone numbers of suspected spammers. Further, like traditional antivirus products, Anti-Virus Mobile includes automatic update abilities, and it can be set to obtain updates according to a user-determined schedule (by default, the program grabs definitions once per week).

Mobile antivirus is also available from smaller developers, such as BullGuard (www.bullguard.com), which offers its Mobile Anti-virus product for both Windows Mobile and Symbian platforms. BullGuard's product can be downloaded and installed over-the-air straight to the device and includes on-access and on-demand scanning. █

News From The Help Desk

Our Most Common Tech Calls

COMPILED BY KYLEE DICKEY

Each month, we receive numerous technical support calls and email messages. Some computer problems are fairly common, and we find that many callers struggle to resolve the same issues. In this article, we cover three of the most common or timely tech support questions and provide our solution for each of them.

Q Can I stop Windows 9x/Me from prompting me for a password every time I start my computer?

A Yes, it is possible to log in to Win9x/Me without first entering a password. First, make sure that you are not using Windows User Profiles. Disable the User Profiles by restarting your computer and clicking Cancel at the Windows logon screen. Click Start, Settings, and Control Panel. Double-click the Passwords icon and click the User Profiles tab. Click All Users Of This PC Use The Same Preferences And Desktop. Click OK. Restart your computer when prompted.

Once you've disabled Windows User Profiles, click Start, Settings, and Control Panel. Double-click the Network icon. In the resulting Network Properties box, click the Configuration tab. In the Primary Network Logon section, click the Windows Logon radio button. Click OK.

When you see a prompt to restart your computer, click the No button. This is very important. Then click Start, Settings, and Control Panel. In the Control Panel window, double-click Passwords. Click the Change Passwords tab, click Change Windows Password, and click OK. In the Old Password field, enter your old logon password. Make sure that nothing is in the New Password field or the Confirm New Password field. Click OK and click OK again.

Click the User Profiles tab. If there are multiple users configured for your system, make sure that all of the preferences are the same for all of the users. Click the Close button. Click Start and Search (or Find). Click For Files Or Folders. In the Named field, enter ***.pwl**. Under Look In, click Local Hard Drives. Press ENTER. Right-click the first PWL file in the list of search results and click Rename. You may leave the file name the same, but replace PWL with OLD. Repeat this process for each of the PWL files listed in the search results.

Finally, you may restart your computer. Unless you have the Windows 95 Power Toys TweakUI tool installed, you shouldn't see a logon prompt. If you do have Windows 95 Power Toys TweakUI, you'll need to go to support.microsoft.com and type **135586** in the Search Support (KB) field and press ENTER. You'll find a list of resources that can help you resolve this problem.

Q I would like to set up a dual-monitor display so that I have more Desktop space for open windows and don't have to toggle between windows as often. What do I need to do create a dual-monitor setup?

A Over time, it's become easier to set up a dual-monitor system, because more video cards support this configuration and because OSes (operating systems) now have better support for multiple-monitor displays. For example, Windows XP and Windows Vista both have a built-in DualView option in the Control Panel.

To set up a dual-monitor display, first you'll need to check the specifications for your video cards and ensure that they support dual-monitor configurations. You'll also need to make sure that the video card and the dual-monitor support extends to the version of Windows that you have installed. If your second monitor will be a notebook LCD, check the notebook computer's specifications to ensure that it supports multiple-monitor displays. Many modern notebook computers do.

You will need to have two available video ports on your computer. To do this, you will either need a dual-head video card (one with two video ports and support for dual-monitor displays), or you will need two compatible PCI (Peripheral Component Interconnect) video cards. Follow the instructions that came with your video card or cards to install it in your computer. Make sure that you also install any drivers that came with your video cards. Then connect the two monitors to your computer, each to one of the available video ports. Restart your computer to ensure that Windows detects both of the monitors.

If you have a single dual-head video adapter with two monitors attached, you'll want to use the DualView feature to enable dual-monitor support. To do this, right-click the Desktop and click Properties. When the Display Properties window appears, click the Settings tab. Click to select the
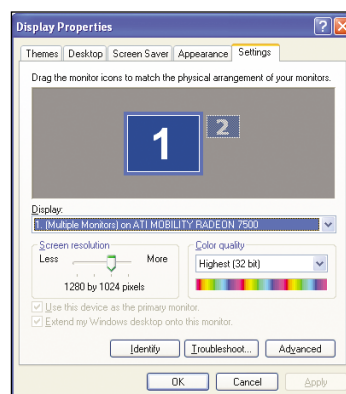
Windows' Display Properties dialog box lets you configure a dual-monitor setup.

picture that represents the Display Monitor that you want to add and click the Extend My Windows Desktop Onto This Monitor checkbox. Click the Apply button.

Because dual-head video cards are typically much more expensive than standard video cards, it's more likely that you'll set up your computer with two video cards than with a single dual-head adapter. To set up a dual-monitor system with two compatible video cards, make sure you have the video cards installed and the monitors attached. Then right-click the Desktop and click Properties. In the resulting Display Properties dialog box, click the Settings tab, the numbered picture of the monitor you want to add, and Extend My Windows Desktop Onto The Monitor. Click Apply. Next, drag the large monitor icons in the Desktop Properties window so that they are arranged the same way as your physical workspace is. Each of the monitor pictures on the screen is numbered. You can quickly determine which of your physical monitors is Number 1 and which is Number 2 by right-clicking one of the monitor icons in the Display Properties dialog box and clicking Identify. You'll see the corresponding number appear on your monitor.

For the most part, you'll find that it's just as simple to set up a multimonitor display in Windows Vista. However, there is one exception. Vista requires that all installed video cards use the same driver. This means that to set up a dual-monitor display, each video card will need to have chipsets from the same manufacturer. In other words, in Vista, you won't be able to get away with using one Nvidia card and one ATI card. If you try to do this, you'll likely encounter problems trying to create a dual-monitor display.

Q Why doesn't my iPod work properly with Windows Vista?

A When Microsoft released Windows Vista, there were a number of compatibility problems with iPods and iTunes. Late this past winter, Apple released an iTunes update that fixed several of the bugs with Vista. However, there remained certain instances in which Vista could corrupt an iPod's files when ejecting the iPod from a PC.

You can now download a Windows Vista update that will correct the problems with data corruption. First, make sure that you have the most recent version of iTunes and of your iPod software. Check Apple's site for the latest version of iTunes. If you do not have it, download and install the update.

Next, click the Start menu and Control Panel. Click Security and Check For Updates. Click View Available Updates and make sure there is a check mark in the Update For Windows Vista (KB936824) checkbox. Click Install. After the update is installed, restart your computer.

Finally, connect your iPod to your computer and, if it isn't already running, launch iTunes. Click iPod in the Source

Initially, Windows Vista and iPods were not compatible. However, Microsoft has released an update that makes them work together.

pane (the pane on the left). In the right pane, you'll see the iPod Summary. In the center of the right pane, there is information about the current version of the iPod software that is installed. If an update is available, you'll be able to click the Update button. If you already have the most recent software for your iPod installed, the Update button will be grayed out.

If you have the Update For Windows Vista (KB936824), the most recent version of iTunes, and the most recent iPod software installed, you should be able to use your iPod with Vista. ▌▌

Feature Package Topics

Each *Smart Computing* issue includes tips, reviews, and information about a variety of topics. However, each issue also has a featured group of articles about a selected topic. Below is a list of the Feature Packages from the previous year. As a *Smart Computing* subscriber, you have access to all of our archived articles at www.smartcomputing.com.

The Altex tria HD-2100 Notebook | MRSP: $1,395 | www.altex.com

Rugged Mobility & Wireless Freedom

Have you been treating your notebook with kid gloves? Well, you can stop. The ruggedized tria HD-2100 is the perfect mobile solution for the job site, classroom, or on the road. Stop worrying about the elements—the Altex tria HD-2100 has got your back!

- Spill-resistant keyboard, drop-resistant, shock-resistant magnesium alloy case
- Intel Pentium M processor 740, Intel 915GM chipset
- Intel wireless B, G
- 512MB DDR2 RAM
- 80GB ATA hard drive, DVD±R/RW Dual Drive

- The Traveller™ surge protector
- Windows XP Professional
- 1.57 x 12.99 x 10.83 inches (H x W x D), 6.32 pounds
- one-year parts and labor warranty
- 15.1-inch XGA TFT display
- 10/100/1000 LAN, V.90 56K modem
- IEEE 1394 port, (3) USB 2.0 ports, external monitor port
- Speaker/headphone jack, S-Video TV-out
- Li-Ion battery pack

The tria's display and hard drive are surrounded by rubber to protect against vibration.

Prefer an Intel Dual Core Processor? Take a look at the Altex tria-7200V3 notebook, featuring the Intel Core 2 Duo processor, 1GB DDR2 RAM, a 100GB SATA hard drive, and a full three-year warranty that covers parts and labor. MSRP: $1,499.
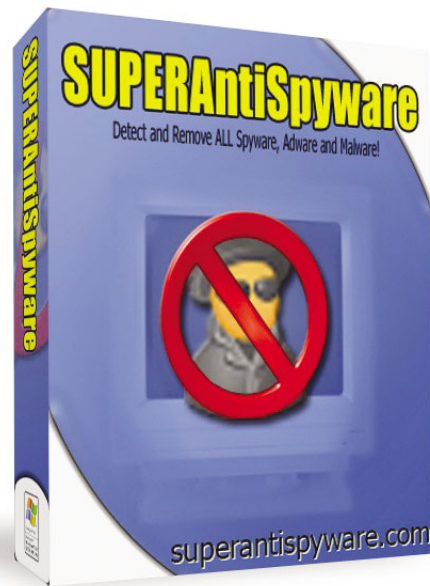
SUPERAntiSpyware | MRSP: $29.95 (Pro version) | www.superantispyware.com

Eliminate ALL Of The Spyware, The Easy Way

SUPERAntiSpyware is the most thorough spyware scanner on the market. Multi-Dimensional Scanning and Process Interrogation Technology will detect spyware that other products miss! SUPERAnti-Spyware will remove ALL the spyware, NOT just the easy ones!

- Easily removes over 100,000 pests, including SmitFraud, Vundo, WinFixer, SpyAxe, SpyFalcon, WinAntiVirus, AntiVermins, and thousands more.
- Quick, complete, and custom scanning of hard drives, removable drives, memory, the Registry, and more.

- Detect and remove spyware, adware, malware, Trojans, dialers, worms, key loggers, hijackers, and many other types of threats.
- Schedule either Quick, Complete or Custom Scans daily or weekly.
- Compatible with Windows 98/Me/2000/XP/Vista.
- Automatic updates check for program and definition updates every eight hours.
- Free email support to help resolve issues immediately.

Try it out at no cost! SUPERAntiSpyware

Professional offers a 15-day fully functional free trial. (A free version with somewhat less functionality is also available for personal use.) SUPERAntiSpyware Professional features our highly advanced Real-Time Protection to ensure protection from installation or reinstallation of potential threats as you surf the Internet. You need better protection, and you can be sure that you'll get it with SUPERAntiSpyware Professional.

Hard Drives Go Head-To-Head

Terabyte Drives Are Here

Marty Sems

Send your comments to
marty@smartcomputing.com

Deskstar 7K1000 1TB

$399

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www.hitachigst.com

HD501LJ 500GB

$199

Samsung

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www.samsung.com

Barracuda 7200.10 750GB

$279.99

Seagate

(877) 271-3285

www.seagate.com

Caviar SE16 500GB

$169.99

Western Digital

(949) 672-7000

www.westerndigital.com

Need some more elbow room? Say what you want about the rest of the world, but where hard drives are concerned, your dollar goes further every year. Prices keep dropping, and capacities keep growing. How's a full terabyte (1TB, or roughly 1,000GB) at 40 cents per GB sound to you?

Suffice it to say that things have changed since my Staff Pick in last month's issue of *Smart Computing.* I recently compared a whole host of hard drives for *Computer Power User*, one of *Smart Computing*'s sister publications. (Subscribers to any of our magazines can go to www.smartcomputing.com, click Search All Articles, check the *Computer Power User (CPU)* box, and then search for "Your Next Data Vault" to read the article.)

Four of the drives I tested were models that mainstream users might consider as additions to or replacements for the hard drives inside their PCs. They're all compatible with computers that have SATA (Serial ATA) connections.

My group of Hitachi, Samsung, Seagate, and Western Digital drives ranged in capacity from a huge 500GB to an incredible 1TB. (The Hitachi Deskstar 7K1000 is the first terabyte drive on the market, by the way. See the "Staff Pick" article about this remarkable drive on page 27 in this issue.)

These drives aren't exactly budget-priced, being the models with the most storage space from each manufacturer, respectively. However, each drive has at least one smaller sibling in its family. For example, the big Hitachi also comes in a 750GB edition. A smaller drive will cost you less than the top model, and you'll get about the same level of performance or better.

For most users, I'd normally recommend shopping for a current, 7,200rpm hard drive with the longest warranty and the
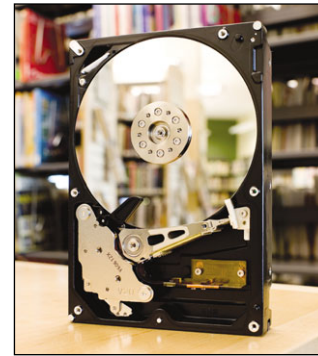
The Hitachi 7K1000, the world's first terabyte hard drive.

most capacity for your money (dollars divided by gigabyte).

However, a 7,200rpm hard drive that's faster than its rivals will make your entire PC seem more responsive and fun to use. When a new model is significantly speedier than the current competition, like Hitachi's 7K1000, it may be worth a higher cost per gigabyte. The benchmark results in the accompanying chart demonstrate the Hitachi's superiority. (Western Digital offers the 10,000rpm Raptor series, but it tops out at 150GB and costs about four times as much per gigabyte.)

Of these four drives, the Western Digital Caviar SE16 500GB has the best balance of cost per gigabyte and warranty—but only if you buy a bare "OEM (original equipment manufacturer)" drive from an online retailer, as the retail box sold on store shelves has a ridiculously short one-year warranty. The WD Caviar SE16 is a great performer, too.

However, if speed matters to you, the big, pricy Hitachi 7K1000 1TB takes the biscuit. It's not often that the hugest drive on the market is also the fastest, but Hitachi pulled off both feats this time. ❚❚

3Gbps SATA, 7,200rpm, desktop hard drives	Hitachi Deskstar 7K1000 1TB (1,000GB)	Samsung HD501LJ 500GB	Seagate 7200.10 750GB	Western Digital Caviar SE16 500GB
Price	$399	$199	$279.99	$169.99
Cost Per Gigabyte	40 cents	40 cents	37 cents	34 cents
Warranty (Years)	Three	Three	Five	One (Retail) / Three (Bare)
PCMark05				
Overall Score (Points)	6879	5661	5097	5867
General Usage (MBps)	7.8	5.9	5.3	6.8
Folder Transfer Times (minutes:seconds)				
4GB read*	2:36	2:40	2:47	3:00
4GB write*	5:18	5:00	8:44	5:43
HD Tach RW				
Read Rates, Average/ Maximum (MBps)	72.7/102	68.4/87	67.5/85	66.8/84
Write Rates, Average/ Maximum (MBps)	72.6/88	67/85	66.2/85	66.7/84
Random Access Time* (ms)	13.4	16.1	13.6	13.8
* Lower is better.				

Tuning In To Internet Radio

Is It Here To Stay Or Fading To Static?

Blaine Flamig

*Send your comments to
blaine@smartcomputing.com*
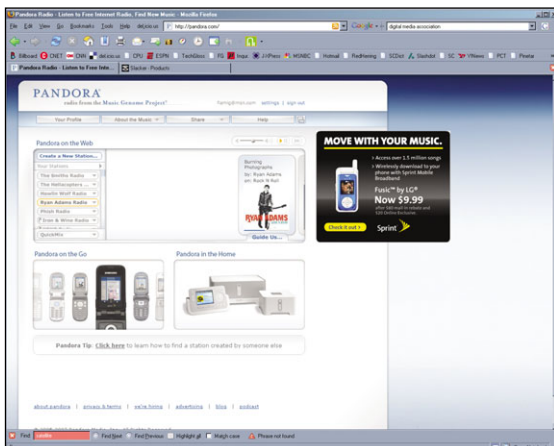
Two of my children are learning to play musical instruments, yet it's the third and oldest, despite not even being able to whistle, who has the strongest intrinsic love for music. At an age (nearly 15) where image rules all decisions, he'd rather lose his hair than his record player. (He buys albums, bless him.) His bond with music patterns the one I made at his age, and as it did for me, music gives him some stability during a teenage existence overrunning with the opposite. I'm also grateful that our mutual love of music has cemented a bond between us that I'm convinced no disagreement, confrontation, or conflict will crack. Some fathers share baseball. We share a fondness for Bob Dylan, guitar solos, and distortion.

Sadly, our connection doesn't include terrestrial radio. Although I cherish memories of tearing up the FM dial to catch my favorite DJ's 8-to-midnight shift, he doesn't and won't. The inescapable blandness of today's corporate-drunk radio guarantees as much. There's no incentive for a kid with eclectic tastes to invest time in a medium that doesn't have room for George Jones, John Coltrane, Tito Puente, The Ramones, or Howlin' Wolf. Save for local AM, I turned my back on terrestrial radio for the same reasons.

Instead, I'm now a satellite and Internet radio junkie. I listen almost exclusively to Internet radio most days, particularly Pandora (www.pandora .com); Yahoo! Launch-Cast (music.yahoo.com /launchcast); and my recent favorite, Slacker (www.slacker.com). All get my attention for their free customization options. Slacker's Web-

based and Desktop Radio players, for example, let me mark artists I love and ban songs or artists I don't like.

In exchange for variety and free listening, most services have ads, though many axe them for a monthly fee. Still, the trade-off is worth it. Slacker, for example, lets you designate 12 channel presets, rename stations, email stations to friends, and create stations. The similarly excellent Pandora inked deals with Sprint and Sonos to make its stations available on compatible cell phones and over Sonos' home-based Digital Music System.

This summer, Slacker will release a portable player that will automatically refresh your songs via a Wi-Fi connection or satellite car kit. Additionally, a planned Premium service ($7.50 per month) will give you on-demand access to favorite songs stored in the Desktop Radio app, as well as omit ads and let you skip an unlimited number of songs.

Unfortunately, all news concerning Internet radio isn't as good. In March, the U.S. Copyright Royalty Board approved a proposal from SoundExchange, which collects and distributes fees for record labels. Effective July 15, royalty rates for Web broadcasters would raise from .08 cents per song per listener, retroactive to 2006, to .19 cents in 2010, in addition to a $500 fee for each channel the service offers. According to various reports, this would mean a 300% to 1,200% increase in payments. Following the CRB's ruling, many industry experts stated that the majority of Webcasters will be forced out of business.

"As a member of DiMA (Digital Media Association), Slacker is certainly an interested party in the outcome of the final rate structure for online radio," Slacker's Sasse, VP of marketing, told us. "With that said the Slacker business model remains very healthy even with the proposed changes to the CRB rates."

That's due to a licensing deal Slacker reportedly signed with the four major record labels. Hope for other stations rests with the Internet Radio Equality Act, two congressional bills now under consideration in the House (H.R. 2060) and Senate (S. 1353) that would essentially match rates for Webcasters with those that satellite radio pays (7.5% of revenue). More information concerning the bills is available at SaveNetRadio.org. ▐▌

Slacker portable player

Pandora Web player

The Electric Grandmother

Master Long-Distance Grandparenting

Kylee Dickey

*Send your comments to
kylee@smartcomputing.com*

When I was growing up, I was fortunate to have most of my extended family nearby, and my grandma was even our babysitter when we were young. It's obvious, though, that many of today's children aren't as fortunate. Families are much more mobile than they used to be, and too often, hundreds or even thousands of miles separate grandparent and grandchild.

My own family is about to experience this firsthand. By the time this issue hits newsstands, I will be an aunt. My brother's family lives out of state, so I know that it will be a challenge for my parents to be part of their new grandson's life. In order to feel connected, they'll need to rely on technology.

Distance Requires Creativity

Technology is somewhat of a double-edged sword. On the one hand, technology has certainly played a role in families becoming so displaced. It has made us more mobile, and it's given individuals easy access to job listings throughout the country. On the other hand, technology offers many ways that we can stay in touch with far-away family members. We have opportunities now to stay involved in friends' and family members' lives, even if miles separate us.

If you are one of the many people who struggle to maintain family connections over great distances, there are many ways that you can use technology to stay close to your loved ones. One of the more conventional ways to do this is using a Web cam. Many companies, such as Logitech (www.logitech.com), offer reasonably priced Web cams that include videoconferencing software that you can use to have video chats with your loved ones. Consider buying a Web cam for yourself and one for each long-distance branch of your family. Before giving a child a Web cam, though, make sure you discuss the idea with the parents. Without proper supervision and guidance, a Web cam can be risky for a child to use online.

> Consider buying a Web cam for yourself and one for each long-distance branch of your family.

You can also create photo albums using online services such as Flickr (www.flickr.com), Smugmug (www.smugmug.com), or Photobucket (www.photobucket.com). Your children and grandchildren can post their photos online for you to see, and you can upload your most recent photos, as well.

Many people think of blogging as belonging to the young, the political, and the self-important. However, there is no reason that you can't create a family blog where family members can post updates, write letters, and share photographs. If you use a service such as Google's Blogger (www.blogger.com), it can be very simple to set up a blog, give posting rights to other family members, and create an online gathering place for your family.

If you can't fathom writing long, involved blog entries but like the general idea of posting updates online for family members, you might consider a microblog or a tumblelog. A couple of examples of microblogs include Twitter (www.twitter.com) and Jaiku (www.jaiku.com). Microblog entries are typically only a sentence or two long, about the length of an IM (instant message). They are just brief updates that tell what you are doing at a specific point in time. Jaiku even includes smartphone integration for posting and receiving updates on your phone and sharing your calendar with others.

Tumblelogs are similar to blogs but have fewer words and more photos, videos, and other multimedia content in the entries. One site that offers users tumblelogs is Tumblr (www.tumblr.com). The beauty of a tumblelog is that it is quick and easy to post. You don't need to spend as much time maintaining a tumblelog as you do a blog.

Closer Than Before

Don't forget that you can also use technology to help you leave your computer and actually *visit* loved ones. Many Web sites such as Expedia (www.expedia.com), Travelocity (www.travelocity.com), and Orbitz (www.orbitz.com) can help you find reasonable rates on airfare, hotel rooms, rental cars, etc. After all, no matter how connected our technology lets us feel, there's still nothing quite as special as sharing a hug with a beloved family member. ▐▐

Type Right

Logitech Stands Up For Notebooks

Joshua Gulick

Send your comments to
joshua@smartcomputing.com

The summer before I started college, my parents bought me a notebook. It had a tiny screen and a smaller keyboard, and it ran Windows 95, grudgingly. I loved it.

My fingers ached after typing for hours on that cramped keyboard, but that didn't stop me—at least, not at first. I used the notebook to type papers in my dorm room, and I took it to class so I could type my notes. (Bringing a notebook to class is the norm on many campuses today, but it was the mark of a true geek back then.)

After a few weeks of watching my friends type merrily away on their desktops' full-sized keyboards, I caved and bought a standard keyboard and mouse. When in my room, I'd attach them to my notebook and open the notebook so I could use its screen as a monitor. This setup worked pretty well, though I quickly ran into two problems.

For one thing, I had to connect or disconnect the peripherals whenever I wanted to take my notebook on the road. I had already attached a printer and my external CD-ROM drive to my notebook, so the keyboard and notebook mouse meant that much more unplugging. More importantly, the notebook monitor sat well below eye level, which forced me to hunch forward when I typed. Being the sort of energetic, go-getter college student that I was, I promptly devised a solution: I propped the notebook on a stack of books and left it there. I took the rest of my class notes by hand.

Of course, there are plenty of stands these days that will prop up your notebook (there were back then, too, I'm sure). Many accessories manufacturers also offer docking stations, which let you quickly attach and detach your peripherals to and from your notebook. I've seen several devices for people who use their notebooks at home and on the road, and my favorite so far is Logitech's Alto.

The Alto is a keyboard that also includes a notebook stand. It doesn't have a full-fledged docking station, but it does offer a 3-port USB 2.0 hub, which can handle many of your peripherals, including a USB or wireless mouse. It uses a single USB cable to connect to your notebook, and it holds your notebook screen at eye level. It's even better than a stack of books.

The stand itself is a very simple setup that props up your notebook, which means that the notebook's keyboard is exposed to settling dust. It also means that removing the notebook is a snap: You unplug the USB cord and then lift the notebook right off the computer. I'm disappointed that the stand doesn't have multiple angle settings. Sure, you can adjust the notebook screen, but extra angles would have been a nice touch.

Keyboard manufacturers sometimes skip the NUMLOCK and other LEDs (light-emitting diodes) when they build unusual boards, so I'm glad to see that Logitech kept them around. As with other Logitech keyboards, the keys offer a little resistance when you press them, but they aren't sticky (I found them very comfortable), and they're nearly silent.

The board also includes a full number pad, arrow keys, and function keys that can double as shortcut keys when you press the FN key. The shortcuts can open your email application and control your computer's media player program. However, the volume controls are actual buttons, rather than keys, which means you can find the Mute button (just below the arrow keys) quickly in a pinch.

Logitech also took the unusual step of making the Alto easy to collapse. Apparently, Logitech sees users using the Alto on the kitchen table, then folding it up and putting it away before dinner. I suspect that the Alto's folding capabilities won't see much use in most households, but I like it nonetheless because it speaks to the Alto's clean, clutter-free design. If your desk today looks like my desk did in college, the Alto is exactly what you need. ▐▐

Alto
$99.99
Logitech
(800) 231-7717
(510) 795-8500
www.logitech.com

Video Chat Software
Keep In Touch

O nce reserved solely for business use, video chat has gone mainstream: Expats and other family members who've wandered away from the nest use it to make regular virtual visits home. Kids use it to "go to Grandma's house" without ever leaving their homes. Telecommuters use it to attend virtual "meetings." All you need is your computer, a good Web cam, and a solid 'Net connection. Headphones make the experience virtually echo-free too, but that might muss your hair too much for Grandma.

Recognizing the latest wave in Internet communication, everyone from AOL to Windows Messenger has entered the game. Not all video chat clients are created equal, however, so we took a look at four popular clients to see which makes the cut as the Smart Choice.

AIM 6.1

AOL's chat client, AIM (AOL Instant Messenger) has been around for a while. One benefit to AIM is that chances are good you already know some people who use it. A chat program isn't much use, after all, if you have no one to chat with.

Unfortunately, AIM did not perform as well as some other chat clients in more substantive areas. We noticed some audio problems in our test calls, for instance. Sounds cut in and out, making it difficult to understand our chat "buddy." While that could have something to do with our particular network/computer setup, we did not have the same issues with other programs.

AIM is certainly easy to use, with the same basic interface seen throughout this group of programs. A list of contacts appears in a tall, skinny window on the edge of your screen. When you double-click a contact name, AIM opens a standard chat window. At the bottom of that window, you'll see buttons for different functions, including video. Both users must have AIM 6.1 installed to chat via video. You can also continue to text chat while a videoconference is ongoing, so if you're an emoticon lover, you're set.

The multiple windows that pop up as you navigate chat can be annoying, but in AIM's defense, you can close the main AIM window (the vertical pane that typically covers the left side of the screen) and the IM (instant message) window without affecting the video chat window.

AIM also comes in a free "pro" version. AIM Pro is compatible with Windows Vista and integrates with Microsoft Outlook.

SightSpeed 6.0

SightSpeed is not the best-known video chat program, but it deserves to be considered alongside the big names.

SightSpeed's interface is simple and easily navigated—even online newbies could pick this up quickly. Once you run through the configuration screens, SightSpeed opens with your computer's video already on display in the main window. The contact list is directly to the right of the video. Mouse over the contact you want to call and click the Video button to connect.

Our SightSpeed video was somewhat blurry, but the frame rate was fast enough to give calls a more "live" feel. The video can be resized and even blown up to full screen, although the fuzziness of the video stands out at such large window sizes. SightSpeed also has a limited text chat feature without all the emoticons, rich text formatting, and other doodads you see in programs like AIM.

SightSpeed comes in a free version and a more feature-filled, fee-based version. For

$4.95 a month or $49.95 a year, you can add video-conferencing with up to four people, stored video mail, call recording, and more. Even the free version comes with one feature you don't see in most video chat programs: video mail. If a contact is offline (or even if they're online but you don't want to bother them at the moment), you can record up to 30 seconds of video that shows up like an email in the contact's SightSpeed inbox. They can then watch the video at any time. Video quality for messages was especially good in our test.

SightSpeed also offers the ability to call regular landline or cell phones through the SightSpeed interface. Of course, video doesn't work on those types of calls. Calls to regular telephones also cost money; for calls within the United States you'll pay 2 cents a minute. Costs for calls to other countries vary.

SightSpeed's support is also worth a mention as it is one of the few with an actual email address available. SightSpeed also features step-by-step How-Tos on its Web site, linked from the Video Chat window, making it easy for novices to find and then actually see how the process works.

While SightSpeed has qualities to admire, you're unlikely to find your contacts already using the program. Luckily, SightSpeed members are given a personalized My SightSpeed Web address, which they can give to anyone they'd like to chat with. Nonmembers simply enter the personalized address, and they can chat with members in a browser window. Nonmembers must have IE 6.0 or higher for Windows.

Skype 3.2

Skype gains some points for popularity—it's possibly the most well-known free video chat service. We didn't have to look far before we found friends to test it with—as far away as Egypt and as close as down the block. Surprisingly, the distance didn't make a difference in quality. In both cases, the video quality was a bit blurry and the frame rate lagged a bit.

One of Skype's positive attributes is ease of use: All you have to do is download the application, install, and create an ID and password. From there, you can flesh out your online profile and search out contacts. You don't have to hunt around for the right button to invite someone to chat; just click the contact name and then the green call button. To hang up, press the red button. It couldn't be simpler.

Skype has pages and pages of support, from a Knowledgebase to User Guides and a few things in-between. This is great for experienced users and certainly better than AIM, but there's also so much to wade through that it might be difficult for less savvy users to locate the answers they need.

BUYING TIPS

Video chat is practically revolutionary, but like many innovations, it can be hard to get less-motivated friends and family onboard. Make it easier by choosing the right chat program for your target chatters. For those who may be easily frustrated navigating instant message programs, your best bet is Skype or SightSpeed. Both applications open to an intuitive interface, don't require much setup, and are incredibly easy to use. Bonus feature: Neither are mucked up with emoticons or other cutesy add-ons.

Software Information

	Price	Company	Contact Information	URL
AIM 6.1	Free	AOL	Online Only	www.aim.com
SightSpeed 6.0	Free; upgrade to Pro for $4.95/month or $49.95/year	SightSpeed	info@sightspeed.com	www.sightspeed.com
Skype 3.2	Free; some add-ons extra	Skype	Online Only	www.skype.com
Windows Live Messenger 5	Free	Microsoft	Online Only	get.live.com/messenger

Scorecard

	Features	Ease Of Use	Installation	Support/Documents	Price	Overall Score
AIM 6.1	3	3	4	3	5	3.6
SightSpeed 6.0	4	4.5	4	4	5	**4.3**
Skype 3.2	4	4.5	3.5	3.5	4	4.1
Windows Live Messenger 5	4	3.5	3	3	5	3.7

Skype, like a growing number of other chat programs, also lets you dial regular telephone lines in addition to contacting people through their computers. Unlike other chat programs, though, Skype concentrates on this feature, and its capabilities as a regular phone are the best in the field.

Unlimited calls to the United States and Canada cost $29.95 per year. If this feature is important to you, Skype enjoys a huge base of support for telephone calling, including special phone handsets and other devices that make using Skype easier.

Windows Live Messenger 5

Messenger was the only program in this group that made us sit through a short ad every time we called someone—an annoyance that could quickly become irritating if you have a bumpy 'Net connection and need to redial a time or two.

Live Messenger is pretty easy to use, however. Just right-click a contact's name, choose Video, and then Start a Video Call. An IM window opens where you can continue regular chat alongside video, thereby employing all the emoticons and other add-ons IM programs are famous for offering.

Performance-wise, Live Messenger provided good-quality video at decent frame rates. Overall, the picture was better than AIM and probably even a bit better than SightSpeed. The bad news is that it did slow down our computer far more than some of the other programs, making it difficult to multitask. Maybe this isn't a huge drawback—after all, with video chat the other person can see when you're not giving them 100% of your attention—but it's still

a bit disconcerting. We also had problems with it freezing up two or three times, requiring a restart.

Like AIM, Windows Live Messenger has a huge base of users that is bound to include at least some people you know. Windows Messenger instant message chat is interoperable with Yahoo! Messenger, meaning you can add Yahoo! buddies to your Live Messenger contacts list. This can expand your potential chat mates exponentially. Live Messenger also includes the ability to call regular phones.

As with all things Microsoft, Live Messenger users have access to the company's Knowledgebase when they need answers, but that's not the most user-friendly forum. An online feedback form is available too, but there's no phone or email support.

There are other players in the market, of course, including perennial chat favorite Yahoo! This one didn't make our cut, in part, because it doesn't have a true video chat, even though Yahoo!'s Web cam capability coupled with its voice service does give it a video chat feel. The real problem is how frustrating it is to use—you have to have three windows open to have a single conversation. You must open the traditional instant message window, the Web cam window, and another window for the person you're calling. That's just too much drama when simpler software exists.

Although nothing is quite as good as actually going home for a visit, video chat is the next best thing. The Smart Choice award goes to SightSpeed for the best video chat experience, though it just squeaks by Skype. Both are incredibly easy to use, which is a boon for getting reluctant family members to participate, but the SightSpeed video's frame rate delivers the most real feel and gives this client the edge. ▍▍

BY ANNE STEYER PHELPS

August 2007
Smart Choice

SightSpeed 6.0

Scorecard

Performance	5
Ease Of Use	5
Installation	4
Documentation	4
Price	5
Overall Score	**4.6/5**

Optimize PC Performance

System Mechanic 7

System Mechanic 7 is a one-stop PC clean-up and optimization tool that promises to remove digital bugbears, optimize performance, thwart some types of invaders, and generally maintain your system in peak condition. We tested System Mechanic under both Windows XP and Vista, and it performed admirably. It lacks some capabilities we noted last month in our review of its competitor, Fix-It Utilities, but it offers powerful automation features that busy users will find compelling.

When you install System Mechanic, the product offers to send email updates with information on recent repairs and recommended optimizations. This is a nice touch and one you can safely enable, according to company representatives. At first startup, System Mechanic offers to perform a quick system anal-ysis to start your PC on the road to optimal health. This test is quick (under two minutes on our test system) and can root out a number of problems ranging from Registry corruption and security vulnerabilities, to a slow Internet connection and fragmented (not available due to misallocation) memory. Optionally, you can perform a deep analysis, but this will take much longer (time depends on your system's configuration and drive size but can easily range from one to several hours).

Once analysis is complete, System Mechanic offers to repair problems collectively or individually and tells you how long each will take. This process is optimized for novice users who want an automated process, and it shows. It makes the repairs and corrections quickly and with no fuss, but it also provides little information about changes—even Registry tweaks—that could potentially render a system unbootable if performed incorrectly.

For those who want more flexibility, System Mechanic breaks down its operations into individual categories and selections and offers them in a separate pane for quick selection. Options include PC TotalCare, a complete tune-up (diagnostics, repair, cleanup, and security check), as well as individual sections for tweaking performance, optimizing drive space, enhancing security and privacy, and performing diagnostics and repair problems.

A nifty plus is System Mechanic's Intelli-Status feature, which affords a quick snapshot and one-click maintenance of memory and hard drive allocations as well as startup and running programs. Its start-up program manager, in particular, is one of the best we have seen, providing detailed information on every startup program and service directly without sending you to an external Web site.

On the downside, we wish System Mechanic were more cautious and recovery oriented. The Repair Problems section of the main interface offers an option to create a recovery CD with the Repair An Unbootable PC option. However, it does not suggest you make checkpoints or create any sort of recovery disk during setup or before making potentially damaging changes.

In fairness to System Mechanic, we experienced no problems with any changes it made, but we cannot guarantee that for all users. Consequently, we suggest you use System Restore (under Programs, Accessories, System Tools, on the Start menu in both WinXP and Vista) and make a system checkpoint before you let System Mechanic perform its magic.

In our tests, System Mechanic handled its core competencies—system diagnosis, optimization, and maintenance—very nimbly and with minimal user input. If you are a tinkerer, you might prefer Fix-It Utilities or other performance tweakers. But for the "set it and forget it" crowd, System Mechanic is a winner. Note that Vista users should turn off Windows Firewall during installation to avoid problems with software updates. Furthermore, Vista will block System Mechanic at each startup unless you tell it otherwise. ▐▌

BY JENNIFER FARWELL

✓	Systems Supported
	Windows Vista
	Windows XP/2000
	Windows Me
	Windows 98
	Mac
	Linux

$49.95	
Genie-Soft	
sales@genie-soft.com	
www.genie-soft.com	
Scoreboard	
Performance	4
Ease Of Use	5
Installation	5
Documentation	5
Price	4
Overall Score 4.6/5	

✓ Systems Supported	
Windows Vista	
Windows XP/2000	
Windows Me	
Windows 98	
Mac	
Linux	

Back Up Your Data

Genie Backup Manager Home 7.0

In a world of seemingly unstoppable information flow, backing up data is an important yet often tedious task. Genie Backup Manager Home offers the intuitiveness and flexibility to help you find what you need to back up, make it easy to archive it when and where you want, and retrieve it quickly if trouble occurs.

Genie installs easily and offers tutorials and wizards to get you rolling. The interface is streamlined, letting you create and restore backups, review your backup catalog, edit existing backup sets, and schedule your backup sessions with minimal mouse clicks.

During backup creation, Genie walks you through the process, from choosing your media to deciding which files to archive. Backup media can be just about anything other than tape (which requires Backup Manager Professional). Back up to network locations, online storage repositories, and more.
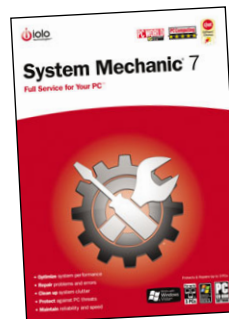
Genie automatically locates and presents for backup an array of important data, such as the Windows Registry, Favorites, media playlists, Outlook data, and more.

Scheduling backup sessions or restoring backed up files is just as easy. Genie also offers a full set of advanced options that let you control the backup or restore process.

The one major drawback is that Genie does not support differential backups. It supports incremental backups, which are similar but not as extensive. (Both archive data that has changed since your last full backup, but differential backups go back to the last data backup, whereas incremental backups go back only to the last incremental backup.) Incremental backups are faster, but they require more effort to restore. ▌▌

BY JENNIFER FARWELL

$297	
SmartDraw.com	
(800) 817-4238	
www.smartdraw.com	
Scorecard	
Performance	3
Ease Of Use	5
Installation	2
Documentation	3
Price	2
Overall Score	**3/5**

✓ Systems Supported	
Windows Vista	
Windows XP/2000	
Windows Me	
Windows 98	
Mac	
Linux	

Create Diagrams & Charts

SmartDraw

Billing itself as "the world's most popular business graphics software," SmartDraw seems so powerful that we thought a test drive was in order. After a leisurely drive, we're not sure this one is worth the sticker price.

The upside is that SmartDraw comes loaded with 150 templates, plus 20,000 pieces of clip art and extras like a chart builder. Furthermore, you can place any of SmartDraw's graphics directly into Microsoft Word, Excel, and PowerPoint or Corel WordPerfect (or save them as PDFs [Portable Document Format]) without worrying about converting a proprietary file format. SmartDraw is easy to use, with the program making as painless as possible such important tasks as aligning objects and importing graphics. Its interface is reminiscent of Photoshop's, even including some advanced capabilities such as layers.

On the downside, some of SmartDraw's graphics are basic and not very professional, and its bailiwick is diagramming and charting, not design. Most templates are for charts, diagrams, floor plans, landscape layouts, and other precise graphics. That's great if you are renovating your bathroom. But for making scrapbook pages or designing your cards, there are better, less expensive alternatives.

Installation is also a bit slow. Based on your drive space, SmartDraw recommends which version (full, typical, or minimum) you should install. If you have less than 1GB of space, it suggests a minimum install. The full installation requires 3GB of drive space and takes an insanely long time—nearly three hours on our reasonably-fast test system.

Meticulous, "neat-freak" users may like this product. However, Joe and Jane PC User may not like it for casual graphic needs. A 30-day, free trial will let you see for yourself. ▌▌

BY JENNIFER FARWELL
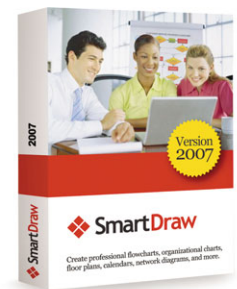
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Gateway DX430X

When it comes to computers, customization is king. Dell, Gateway, HP, and other computer companies all have online configuration tools that let you add to or remove components from your computer before it's even built. As a reviewer, I often look at these systems in their base configurations, which doesn't give me the chance to check out the add-ons that these companies offer.

This time around, I asked Gateway to load up one of its DX430 models. That's Gateway's inexpensive home-user line; the DX430B, for example, starts at $499.99 at the time of this writing. In my case, Gateway selected the DX430X, which, despite being the top system in this series, still has a base price of only $899.99. That base price includes a 2.0 Intel Core 2 Duo processor, 1GB of DDR2 memory, a 250GB hard drive, and a 19-inch widescreen, flat-panel monitor.

Gateway used its online computer configurator to bump up my review unit's specifications (and its price) quite a bit. The system that arrived at *Smart Computing's* headquarters has a 2.13GHz Intel Core 2 Duo processor and 2GB of memory; it also has a 500GB hard drive, an upgraded video card, and a component that transforms this PC into an entertainment center: a TV tuner. That's right—thanks to the TV tuner and the Windows Vista Home Premium operating system's Windows Media Center feature, this computer can record TV shows.

Although I liked the base system's specifications, I like my powerful review unit even more. If you're looking for a serious home-use system that will impress the whole family, from the Quicken geek to the video game freak, you've found it. ▮

BY Joshua Gulick

COMPUTERS

Desktops <= $1,000 Venture DH43IV $799.99	Josh Systemax www.systemaxpc.com	*This family PC, which includes a basic keyboard and mouse, has enough power to handle day-to-day computing. It also offers plenty of USB 2.0 and FireWire ports.*
Desktops > $1,000 Cifer Sli $2675.98 (base price)	Josh Radioactive PC www.radioactivepc.com	*This high-end PC features an overclocked, quad-core processor and two graphics cards. Gamers will love this machine. Customize it with the many upgrades offered.*
Notebooks <= $1,500 Presario V6310US Notebook PC $764.99	Jennifer Compaq www.hp.com	*This relatively inexpensive notebook will support all of your basic needs and even comes with a double-layer DVD±R/RW drive with LightScribe to boot.*
Notebooks > $1,500 CX210X $1,658.97	Jennifer Gateway www.gateway.com	*I added an Intel Core 2 Duo T7200 processor, bumped the hard drive up to 100GB, and added an 8X DVD Writer to get a tablet that will give me ultimate flexibility on the road.*

HANDHELDS

Handhelds & PDAs (personal digital assistants) AT&T 8525 $599.99	Jennifer AT&T www.cingular.com	*With rebate and a two-year contract, this well-rounded phone costs just under $400. For that, you'll get the functionality of a phone, camera, broadband-like Internet, and a mini-computer in the palm of your hand.*

INPUT DEVICES

Keyboards Pro/Type $99.99	Blaine Razer www.razerzone.com	*Razer is noted for its gaming-oriented peripherals, but the Pro/Type's built-in iPod dock makes this board suitable for any music lover who wants tunes at her desk.*
Mice/Trackballs/Trackpads Microsoft Laser 5000 $49.95	Blaine Microsoft www.microsoft.com	*A great Magnifier tool, four-way scrolling wheel, and Tilt Wheel are just a few of the niceties you'll find in this extremely comfortable mouse.*

MONITORS/DISPLAYS

CRTs (cathode-ray tubes) MultiSync FE992-BK $209.99	Andrew NEC www.necdisplay.com	*By all indications, this 19-inch CRT offers business-class reliability, accurate color control, and a glare-free, flat-screen profile.*
LCDs <= 19 inches X192Wbd $199.99	Andrew Acer www.acer.com/us	*If you're looking for an affordable way to expand your horizons, Acer's 19-inch widescreen X192Wbd has some impressive specs for not a lot of cash.*
LCDs > 19 inches SyncMaster 245BW $549.99	Andrew Samsung www.samsung.com	*We've been fans of previous models in Samsung's SyncMaster family and the 24-inch 245BW is no exception. Standout features include a 5ms response time, 3,000:1 contrast ratio, and a sleek piano black bezel.*

Hitachi Deskstar 7K1000 1TB

As demonstrated in the "Hard Drives Go Head-To-Head" Tech Diary column on page 17 of this issue, Hitachi's new 7K1000 is the fastest 7,200rpm SATA hard drive thus far. It's also the first drive available with a 1TB (1 terabyte, or approximately 1,000GB) capacity, as well as a 750GB configuration.

Like many new hard drives, the 7K1000 uses PMR (perpendicular magnetic recording) to achieve such a high data density. To help the drive's speed, Hitachi endowed it with a 32MB cache buffer, which is twice as big as any competitor's. Various technologies allow the drive to be quiet, power-saving, and less prone to error in uses such as digital video recording.

On the whole, most of the 7K1000's benchmark scores fall midway between other 7,200rpm drives and the 10,000rpm Western Digital Raptor, which is impressive. It has a three-year warranty. ▐▌

Deskstar 7K1000 1TB
$399
Hitachi
(800) 801-4618
www.hitachigst.com

by Marty Sems

PRINTERS

Inkjet <= $150 Stylus Photo R380 $129.99	Kylee Epson www.epson.com	*This printer features a 3.5-inch color LCD for previewing photos and navigating menus. You can also print directly to printable CDs and DVDs.*
Inkjet > $150 PIXMA iP6700D $179.99	Kylee Canon www.usa.canon.com	*With its 3.5-inch color LCD, you can preview your photos before you print. In addition, the iP6700D supports double-sided printing.*
Laser <= $200 HL-5240 $199.99	Nathan Brother www.brother-usa.com	*The HL-5240 from Brother is affordable and boasts a maximum resolution of 1,200dpi (dots per inch). At 15 x 15 x 10 inches (HxWxD), this monochrome laser is ideal for those with limited space.*
Laser $200 to $500 HL-4040CN $399.99	Nathan Brother www.brother-usa.com	*This fast-working laser printer produces 21ppm (pages per minute) in both color and monochrome. We also like that you can attach a USB flash drive and print files without connecting the laser printer to a PC.*
Laser > $500 Phaser 4510/N $999	Nathan Xerox www.xerox.com	*With 128MB of memory, a 533MHZ processor, a 700-sheet paper capacity, and a print speed of 45ppm, this monochrome laser can zip through the most complex print jobs.*
MFDs (multifunction devices) Stylus Photo RX580 $149.99	Kylee Epson www.epson.com	*This MFD is easy to set up, easy to use with its 2.5-inch LCD, and features Epson's new Claria inks that are designed to keep prints color-rich even as time passes.*

STORAGE

Flash Memory & Portable Flash Voyager 16GB $299	Marty Corsair www.corsairmemory.com	*The Flash Voyager USB drive boasts an astounding 16GB, plus 256-bit AES (Advanced Encryption Standard) and a 10-year warranty.*
CD & DVD Drives LH-20A1H About $40	Marty Lite-On us.liteonit.com	*20X DVD±R writing is the highlight of this LightScribe-capable burner.*
Hard Drives Deskstar 7K1000 1TB $399	Marty Hitachi www.hitachigst.com	*The first terabyte (about 1,000GB) hard drive is almost as speedy as a Western Digital Raptor, but with nearly seven times the capacity. Also available with 750GB.*

VIDEO/PHOTO

Digital Camcorders < $500 GR-D750 $249.99	Nathan JVC www.jvc.com	*This MiniDV digital camcorder features a 34X optical zoom and a 120-minute recording time, perfect for capturing your child's after-school activities from the grandstand.*
Digital Camcorders > $500 DC50 $799	Nathan Canon www.usa.canon.com	*This digital camcorder performs admirably in low-light conditions and has excellent video quality. Additionally, the DC50 captures 5MP (megapixel) still images, so you won't have to carry a separate digital camera for photos.*
Digital Still Cameras - Point & Shoot PowerShot A640 $399	Kylee Canon www.usa.canon.com	*This 10MP camera features 4X optical zoom and a 2.5-inch LCD. This is an ideal camera for those who prefer to use AA batteries.*
Digital Still Cameras - Adv./Prosumer D40 D-SLR About $600	Kylee Nikon www.nikonusa.com	*The 6.1MP D40 appreciatively mixes friendly operating controls with shooting abilities that go beyond point-and-shoot.*
Graphics Cards <= $150 Radeon X1900GT $129.99	Andrew Sapphire www.sapphiretech.com/us	*This card is one of the best mainstream graphics cards you can buy. At least until the R600-based cards come out.*
Graphics Cards > $150 Radeon HD 2900 XT $399	Andrew AMD www.amd.com	*AMD's first R600-based graphics card may be late, but we think it performs well in its price category. The 320 Stream Processors and 512MB of GDDR3 memory will help you get the most out of modern games and 3D applications.*

Create User Accounts

I f you've got a PC at home, there's a good chance it's regularly used by more than one person. When sharing a system, it's not uncommon for people to also share a single user account (often a default account set up when the system was purchased).

But if you're doing this, you're not taking full advantage of Windows XP's multiuser capabilities. Configuring a WinXP system with a separate account for every user is a much better approach because it affords each of them a more convenient and personalized computing environment. For example, having multiple accounts allows each user to store data in his or her own set of My Documents folders, as well as configure many aspects of the system (such as display resolution and Desktop wallpaper) according to his or her own personal preferences. With the help of a WinXP feature called Fast User Switching, you can also have multiple people logged in to the same system at the same time.

Account Types

When setting up a new user in WinXP, you can choose from two different account types—Computer Administrator and Limited. As you might imagine, Computer Administrator accounts have essentially unrestricted access to all areas and settings of the PC. On the other hand, Limited accounts certainly live up to their name, because they don't permit you to perform any task or change any setting that will affect other user accounts or the system as a whole. Notably, Limited accounts sometimes can't be used to install applications or hardware (though they can usually access hardware or software that's already been installed without any problems) and are even prohibited from making seemingly benign changes such as adjusting the time displayed by the Windows clock.

The all-or-nothing choice between Administrator and Limited accounts isn't the most flexible approach (Vista does a much better job with user accounts). Nevertheless, unless someone absolutely needs administrator access, it's best to set them up with a Limited account. This reduces the likelihood of a potentially harmful system change being

WinXP offers two account types, Computer Administrator and Limited, which you can change as needed.

performed inadvertently by a user or intentionally by a malicious Web site or software.

Setting Up Accounts

To create a new user account, make sure you're logged in with an Administrator account and then click Start, Control Panel, and the User Accounts icon. Then click Create A New Account, type a name for the new account, and click Next. Then it's time to choose whether you want the account type to be Computer Administrator or Limited—once you've made your choice (don't worry, you can always change it later), click the Create Account button, and you'll be returned to the main User Accounts window, where you will see your newly created account listed.

The next order of business is to customize your account and create a password for it. When you click on an account entry, you'll be presented with a list of options. Click Create A Password and you'll be prompted to enter and confirm your password and have the option to set up a hint in the event the password is forgotten. (In the upper-left corner of this window, there's a Learn About box that contains links to information about how to create secure passwords and useful password hints.)

Each user account has a picture icon associated with it. These are automatically assigned by Windows and are easy to change if you don't like the one you got. Just select an account and click Change The Picture, and you'll be able to choose from the standard images. If none of them strike your fancy, you can click Browse For More Pictures to select any image on your system—the one you choose will automatically be converted into the correct size and format.

The Guest Account

There will probably be times that you want to let a visiting friend or family member use your computer but don't want to give them access to any of your personal settings or data. In situations like this, you could always set up a new account for someone to use, but a more convenient option is allow them
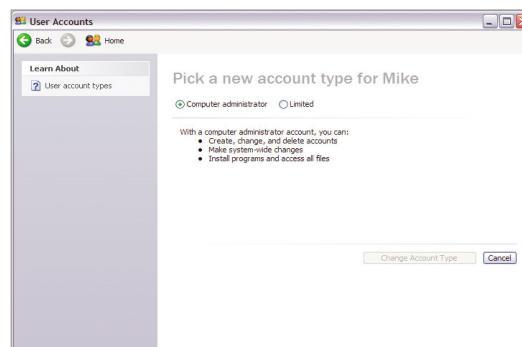
temporary and limited access to the system by taking advantage of WinXP's built-in Guest account.

The Guest account is turned off by default, but you'll still find it listed among your other user accounts—it's the one with the suitcase icon, and it will probably be grayed out. To activate the Guest account, click it and then click the Turn On The Guest Account button. Unlike regular user accounts, the Guest account is a Limited account by default, and it can't be changed. You also can't change the name of the Guest account or assign a password to it. Other than that, it will function much like a standard Limited account, with its own My Documents folder and the ability to use most of the software on the system. (It cannot, however, access the My Documents folders of other user accounts.)

Using Your Accounts & Fast User Switching

After you've set up all your accounts and decided whether you want to use the Guest account, click Change The Way Users Log On Or Off, which is located within the main User Accounts window. Make sure there are checks in the boxes next to Use The Welcome Screen and Use Fast User Switching and then click Apply Options.

The Welcome screen appears when the system first starts up and will display all the accounts available on the system. Users can log in by clicking on an account and then entering the password, if there is one. If you created a password hint for an account, you can view it by clicking on the button with a question mark on it that appears when you click the account.

It's the Fast User Switching feature that really unlocks the potential of multiple user accounts. When Fast User Switching is turned on and you attempt to log off the system using the Start menu's Log Off button, you're presented with an additional option called Switch User. Clicking it will bring up the Welcome screen and allow someone else to log in but keep your account logged in, as well. Fast User Switching is very convenient because it lets you keep applications and files open, lets files download, etc., even if someone else needs to use the computer.

Since Fast User Switching allows many accounts to run simultaneously, it can slow down the overall performance of your system somewhat, but the effect should be minimal unless your system has a slow CPU or limited amount of memory. On the other hand, if your system has an exceptionally fast or dual-core CPU and lots of RAM, you probably won't notice a performance penalty at all.

Another potential downside to Fast User Switching is that some applications won't work—or at least won't work correctly—for a user if they are already running on another user's account. Therefore, in some cases, you may have to close certain applications before switching accounts or they won't be available to others.

From a Computer Administrator account, you can change the characteristics of any other account.
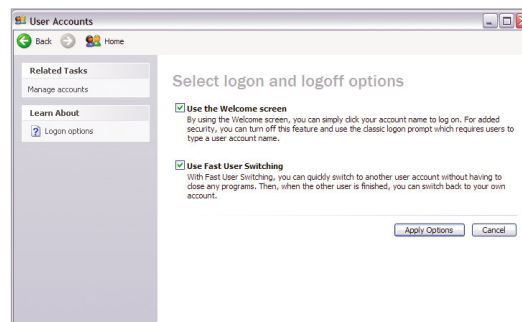
The Welcome screen and Fast User Switching options simplify login and allow multiple accounts to be logged in at the same time.

Managing Accounts

Because some programs don't work properly for users with Limited accounts, you may sometimes need to temporarily (or permanently) change a Limited account to Computer Administrator. If you're logged in with a Computer Administrator account, you can change the name, type, and password of any account; remove the password from an account; or delete an account.

If you ever want to delete an account, you'll need to make sure the account isn't logged in. When you delete an account, you'll have the opportunity to save the files stored in the account's My Documents folder and the contents of its Desktop. (Things like emails or configuration settings aren't retained and will be lost even if you later re-create an account with the same name.) If you choose the Keep Files option, the files will be put into a folder on the Desktop with the same name as the deleted account.

A quick note on account passwords—even if you're not overly concerned about keeping your user accounts private, assigning a password to each can be useful, because it prevents people from accidentally clicking on and then automatically logging in to the wrong account. This can be a time waster since you must wait for an account to finish loading before trying to log off—trying to do so while it's still loading can lead to error messages.

As you can see, the combination of multiple user accounts and Fast User Switching can help several people make very efficient use of a shared WinXP system. ❚❚

BY JOSEPH MORAN

Find Device Drivers For Windows Vista

Wupgrading to any new operating system from Microsoft, a user confronts a major challenge: learning whether an existing computer and its various devices will work with the new operating system. Each hardware device requires its own special piece of operating system software called a device driver, which is any piece of software that allows other programs to interact with the device. You need device drivers for printers, video cards, USB devices, and almost any other hardware component that your operating system needs to "talk to." In other words, a driver is an interface for communicating with the device. In some cases, the device might be virtual, with the device driver not only providing the interface but also emulating the device itself.

These drivers come preinstalled in the case of a new computer, but when you are adding a device or upgrading the entire operating system, you need to be sure that you have the right device driver for each device involved. In the case of Windows Vista, this challenge is more difficult than usual, because Vista has a new device driver model. This means that new device drivers are required because those that work in Windows XP don't usually work in Windows Vista. Adding to the challenge is the fact that some companies have decided not to develop device drivers for older (legacy) hardware.

Determining Device Driver Availability

Upgrading to a new operating system has never been easy—but it's getting a bit easier as the tools improve. We'll focus on the device driver issues involved in upgrading from WinXP to Vista. We'll give you the assistance you require to ensure as smooth an upgrade as possible or to help you make a choice about whether you'd like to upgrade at all.

Assuming that you have checked system requirements and have determined that all of the hardware devices you are looking to upgrade are consistent with Vista's minimum system requirements, the next task is to determine whether device drivers exist for each device in the system you'll be upgrading. Do your video card, printer, scanner, sound card, and other devices in your computer have Vista device driver support? Don't forget to consider the numerous devices that are built into your motherboard. While Microsoft generally develops and provides support for common and standardized devices, such as the system devices, floppy disk controller, and most hard disk and CD/DVD controllers, such support may not be provided

The Windows Vista Upgrade Advisor is free software you can use to check how easily your system can be upgraded to Vista.

for other devices such as USB ports, video and sound devices, Ethernet or networking ports, IEEE-1394 (FireWire) ports, sockets for flash drives and PC Cards, etc.

You can check the Web site of the device manufacturer to determine if there is a Vista driver for your device and download it if there is. If not, you'll need to decide whether to replace the unsupported device(s) in order to upgrade to Vista or stick with the currently installed version of Windows.

Before launching a new operating system, Microsoft discusses the new requirements for device drivers with companies that manufacture hardware and software devices. This process was started over five years ago for Vista. It is up to the device manufacturer to determine whether they will create drivers for any new operating system. Some manufacturers will decide to make device drivers only for current products; others will make them for products that are less than three years old, while still others will support products older than that. Also, some programs, such as Adobe Acrobat, use device drivers to emulate printers. You'll need to check for compatibility with these products, as well.

Driver Certification

Microsoft has a device driver certification program that helps address user concerns. In order for a manufacturer to display Microsoft's Certified For Windows Vista logo, that product is required to:

1 have device drivers for both the 32-bit and 64-bit versions of Vista (Microsoft has also required that any 64-bit driver must have a digital signature that guarantees that it will work with the 64-bit version of Vista);

2 be designed and tested for ease of use, better performance, and enhanced security on PCs running Windows Vista; and

3 install easily and support automatic download of device driver updates from Windows Update.

While the certification logo will certainly help identify which new products are Vista-compatible, how can users determine whether existing hardware is compatible? If your computer is less than one year old with new peripherals, you should have few issues. On the other hand, most users who have computers and/or peripherals that are at least three years old or older will probably face some challenges. Let's take a look at what you can do.

Using The Vista Upgrade Advisor

For the following tasks, you'll need to determine whether you are running the 32- or 64-bit version of WinXP. To do this, right-click the My Computer icon and select Properties in the pop-up menu. Under the General tab, you'll see a list of information. Look at the first line in the Computer section. If Itanium or Itanium 2 appears on this line, you have the 64-bit edition. If anything else is listed, you are running the 32-bit edition. We know this because Itanium-based computers are the only ones that support 64-bit editions of WinXP.

If you are running the 32-bit version of WinXP on your computer, the easiest way to check your system and the issues you will face in upgrading to Vista is to download the Windows Vista Upgrade Advisor from Microsoft, which is available at www.microsoft.com/downloads/details.aspx?familyid=42B5AC83-C24F-4863-A389-3FFC194924F8&displaylang=en.

Carefully consider the results of the Windows Vista Upgrade Advisor before upgrading to Vista.

Search For Device Driver Updates

There are numerous Web sites that supply device drivers and other resources that are helpful when upgrading your PC. This includes device manufacturers' sites, user-driven sites that help you locate information about hardware, and third-party sites that help you identify devices and locate drivers. (Subcribers can log on to SmartComputing.com to see this article and the bonus "Manufacturer URLs" sidebar that accompanies it.)

Consider using these reputable third-party resources:

Driver Agent (www.driveragent.com) This is a free tool that will tell you what drivers are on your computer, and it works with most browsers (such as Internet Explorer and Firefox). Scans of your system are free, and for $29.95 a year, you can gain instant access to the most current device drivers for all your computers. Driver Agent also includes telephone support from 9:30 a.m. to 4:30 p.m., Monday through Friday.

Driver Detective (www.drivershq.com) This is a software program (the trial version is free) that you can download that will test 32- and 64-bit Windows XP computers and list the drivers you have. This application has a module called Vista Ready, which will run the Drive Detective's own Vista Upgrade wizard. This tool will test your computer and advise you as to what you need. If you become a member, for a one-time charge of $29.95, the site will download the drivers for you that you will need for the upgrade.

WinDrivers (www.windrivers.com) This is more than just a driver download site—it provides a wealth of information. The site includes the device drivers that you might be searching for, and it has many extra features you might find helpful, such as BIOS (Basic Input/Output System) updates, security patches, hard drive information, and device and motherboard support. You can gain access to this site for $29.95 a year or purchase a one-day pass for $4.95, giving you access to the most current device drivers for all your computers. This service includes email support.

MrDriver (www.mrdriver.com) This site has an index of manufacturers and device drivers. There are no user fees. Even the Vista Readiness Test is free. You can search the site for needed device drivers by using a list of menus, and then you can download the device drivers from the manufacturers' sites. This site has partnered with esupport.com for BIOS upgrades.
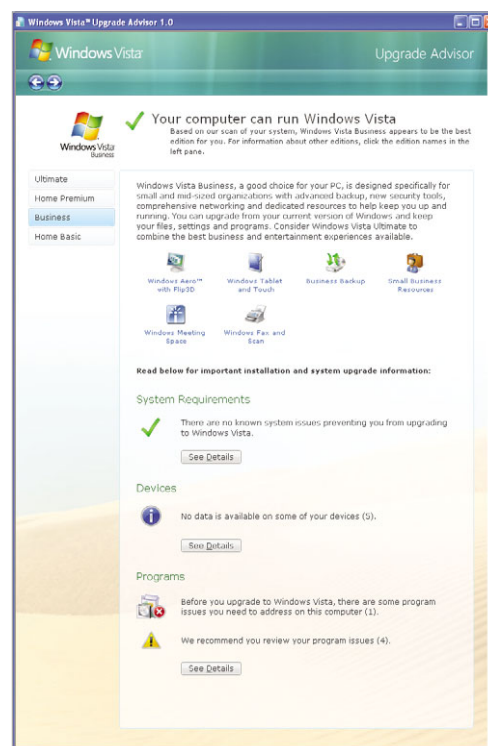
You will need WinXP Service Pack 2 and MSXML (Microsoft Core XML Services) 4.0 or higher on your computer to run the Upgrade advisor. Download MSXML 6.0 at www.microsoft.com/downloads/details.aspx?familyid=993c0bcf-3bcf-4009-be21-27e85e1857b1&displaylang=en. (*NOTE: The Windows Vista Upgrade Advisor only works with 32-bit versions of WinXP. It will not work with any 64-bit editions of Windows.*)

Before you run the Upgrade Advisor, make sure all of the devices that you intend to use with Vista are connected to the computer. This includes all USB devices and other devices such as printers, external hard drives, or scanners that you use with the PC you're evaluating. This step is important as it will prepare you for any issues you may have down the road with these devices. If you forget to plug in a device, you won't know for certain whether or not it will run under Vista.

After the scan is complete, this tool will tell you for which products you will need additional drivers in order to be compatible with Vista.

If after you run the program you receive no warnings, you can install or upgrade to Vista.

The upgrade advisor found several issues in our test machine.

In the first section, Vista Advisor notified us that the CanoScan LiDE 30/N1240U, a scanner by Canon, will not work in Vista. This information tells us that Microsoft does not provide a driver update for this piece of hardware. However, when we checked the Canon support site (www.usa.canon.com/consumer/controller?act=SupportIndexAct&fcategoryid=201), we found that there is a driver for 32-bit versions of Vista. The Vista Advisor does not have all available drivers, so you may need to check with the manufacturer of some products to see if they have a driver available.

The second section lists the devices for which Vista Advisor could not find information. In our case, the devices listed were the Samsung printer, Konica printer, Intel BIOS (Basic Input/Ouput System), and Jungo WinDriver. Again, by going to the Samsung, Konica, and Jungo manufacturers' sites, we found that there are drivers or updates available for these products. When checking the Intel site about the motherboard BIOS,

When you click See Details under Devices, you get detailed information about device support for Vista.

Intel instructed us to upgrade the BIOS before upgrading to Vista.

As noted earlier, if you have no problems listed, then you can upgrade to Vista. Microsoft has, either on the DVDs or CDs that you will use to install Vista, all of the device drivers you need, or they are available as a post-install from the Microsoft update site once you upgrade and connect to the Internet.

You can also join an online driver site where you can go to get all or most of the drivers you need from one site. (See the "Search For Device Driver Updates" sidebar for more information.)

The 64-bit Problem

If you plan to run the 64-bit version of Vista, be aware that there is no Windows Vista Upgrade Advisor for 64-bit computers. You will need to use other methods to test your computer for driver compatibility.

If you bought a brand name computer (such as HP, Dell, Sony, Acer, IBM, etc.), you can go to the manufacturer's site to see if the device drivers are compatible with 64-bit Vista. If you have built your own computer, then you need to use other utilities (such as the tools mentioned in the "Search For Device Driver Updates" sidebar or the Web site of the manufacturer) to find the device drivers you need that support 64-bit Windows.

If you have WinXP 32-bit running now, you can use the Windows Vista Upgrade Advisor to show you the device drivers listed in your computer. Based upon the list, you can then go to each individual manufacturer's site to determine if there is 64-bit Vista support for your products.

If you are currently running WinXP Professional 64-bit and wish to upgrade to Vista 64-bit, the Windows Vista Upgrade Advisor will not work at all.

Upgrading to a new operating system has never been a walk in the park, but with the right information, it can be done. Armed with the right tools, you can identify which of your devices are supported by Vista and which are not. Then, you can find the updates you need to make the transition just a little bit easier and ensure that your devices function properly after the switch. ❚❚

BY JAY FERRON & DAVE WHITTLE
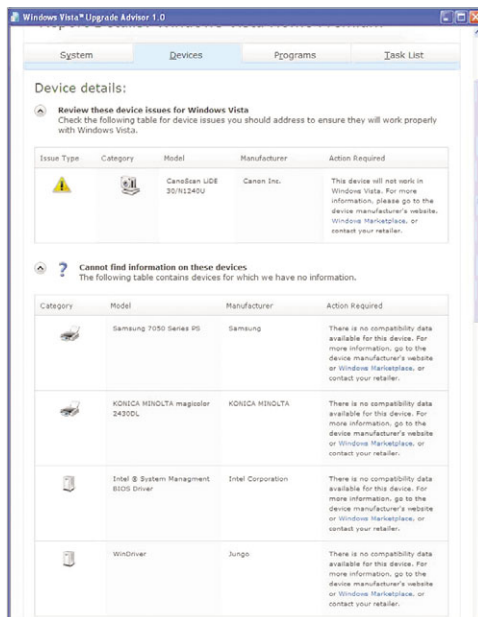
Network-Attached Storage

It's Not Just For Business Any More

Networks are ideal vehicles for sharing all types of ideas and information. You can exchange email with your company's main office in New Jersey, make dinner plans with your spouse via instant messaging, download the latest MP3 files of your favorite music artist, or even post family vacation photos and video clips for the kids to see. The problem is not with sharing the information. The problem is storage.

With multiple PCs networked together, it's difficult to find what files are located on which computer—and all of those networked PCs need to be powered on so that other users can access their shared storage. It's an old-fashioned network setup that's prone to configuration problems and security risks.

The answer to these issues is NAS, or network-attached storage. With NAS, everyone on your network can save their shared data to a single, dedicated device and then independently attach that shared storage device to a port on your SOHO (small office/ home office) network, allowing other network users to share that data directly from the NAS hard drive(s). Businesses and enterprise workgroups have been using NAS for years, but now it's time for a new generation of versatile and inexpensive NAS devices to hit the SOHO market.

"Storage demand is growing at a rapid rate for most small businesses, and in many cases, it is doubling each year," says George Cravens, technical marketing at D-Link. "This makes networked storage an ideal solution, and one that will become quite common over the next few years."

Inside The NAS

NAS systems can vary dramatically in cost and complexity, but every NAS has the same essential parts: the power supply, the processor/interface, and the storage. For SOHO NAS users, the power supply is built into the chassis or provided as an in-line AC adapter. SOHO NAS units won't employ redundant power supplies like an enterprise NAS, so if the power supply quits, you'll lose that network storage. To prevent accidental data loss, many SOHO NAS users therefore power their NAS through a UPS (uninterruptible power supply).

An NAS also includes its own processing components—a dedicated computer—that handles all of the device's setup, management, and operations, along with the drive adapter(s) and an Ethernet adapter, which attaches the NAS to your network. Large NAS systems may include multiple Ethernet ports for redundancy and greater data handling, but a SOHO device will only include one port.

It's best to select an NAS device with a GbE (Gigabit Ethernet) port. This is backward compatible with older 10/ 100Mbps (megabits per second) Ethernet devices but can provide much faster data transfers to PCs with GbE NICs (network interface cards) through a switch with GbE ports.

And then there's the actual storage. A SOHO NAS device will use at least one hard drive. If you want even more storage capacity or prefer to protect data by "mirroring" the contents of one drive to another, it's easy to find a SOHO NAS for two drives. When shopping for an NAS device, pay particular attention to the storage capacity.

For example, the LinkStation Live family from Buffalo Technology (www .buffalotech.com) currently offers models up to 750GB. As with all drives, the usable formatted capacity is somewhat less than the raw capacity. For example, the Buffalo LinkStation Live 250GB NAS (about $230) provides only 232GB of formatted capacity.

Some SOHO NAS devices do not include the hard drives. This is common in larger NAS systems which can hold dozens (even hundreds) of drives. This reduces the cost and allows users to grow the system later. But it's usually a surprise for first-time SOHO NAS users who buy an NAS box only to find that they also need to purchase hard drives separately and connect the drives themselves.

For example, a SOHO device such as the Network Storage Link (NSLU2) from Linksys ($190; www.linksys.com) is merely an adapter that connects your Ethernet network with two USB 2.0 ports for external hard drives, which you'll need to buy separately. The SOHO DNS-323 2-Bay Network Storage Enclosure from D-Link ($229.99; www.dlink.com) provides an Ethernet interface and a two-drive enclosure, but you need to purchase and install the internal SATA (Serial Advanced Technology Attachment) drives yourself.

Replaceable drives are certainly not a bad thing from a technical perspective—you can easily add or upgrade NAS capacity as newer, larger drives become available. Just be aware that you might spend up to $230 for an empty SOHO NAS drive chassis and then spend hundreds more for the drives.

Make It Work

Perhaps the best thing about a SOHO NAS is that it is very easy to install. If you're using an NAS chassis, be sure to install one or two drives as outlined by the NAS manufacturer. In our example, the hard drive is already included in the Buffalo 250GB

LinkStation Live, so installation simply involves connecting the power cord to an available outlet and attaching the unit to an available Ethernet switch port (an open port on your broadband Internet router is an ideal choice). Once you press the power button, the unit initializes and performs a self test. The indicator lights confirm your Ethernet connection.

Your network users won't "see" the new NAS box automatically; you'll need to map the network drive to all PCs or use the accompanying software disc to configure the NAS box. Mapping the

An information utility, such as Buffalo's NAS Navigator, can be installed with the NAS (network-attached storage) device to offer basic details about setup and configuration.

network drive yourself is easy to do, but Buffalo's installation disc makes this task a little quicker. Simply insert the CD and follow the instructions.

The Connect This PC To LinkStation option is the easiest way to proceed. The installer should map the LinkStation on your PC and install a management utility. Every PC that will share this NAS must be mapped properly, so you will need to run the installer on each PC, though you can do that at a later time.

You might want to use the installer on your main PC so that you can access the Buffalo NAS Navigator software in order to manage the NAS. Other network users may want to try mapping the NAS drive manually. To do so, open My Computer to check for networked drives. If the installer failed

to map the drive (or you prefer not to run the installer), click Tools and then select Map Network Drive. Choose an available drive letter (such as Z:) and browse to the shared folder for the NAS device. Click OK to select the drive folder and then click Finish. Now, you'll see the newly mapped NAS drive in My Computer. Double-click the network drive to see subfolders and files.

Once mapped, you can add and delete new folders and read/write data to the drive just as if it were a local drive. Test the NAS by writing a small document to the networked drive and then try reading that file back from the drive. Just remember that NAS is a shared resource, so any data that you upload to the NAS will be accessible by other network users.

For most casual SOHO users, it's enough to get the NAS device connected and mapped—you can put the extra network storage to work in just a few minutes. However, devices such as Buffalo's LinkStation provide a Web-based GUI (graphical user interface) that controls every possible aspect of the storage unit on your network. Open a Web browser, enter the unit's IP (Internet Protocol) address, and then log on with the default username and password. From there, you can manage disk, user, and group setups, as well as perform testing and diagnosis. Most users won't need to fuss with the management utility, but power users and serious administrators will appreciate the flexibility that it offers.

Keep The NAS Secure

Putting data on a shared network storage device is convenient for network users, but it also adds risk for a business. These days, the loss or theft of sensitive data can drive a small organization out of business, so SOHO business operators are very concerned with security. This means limiting

access to data and preventing the data from leaving the premises. Here are some tips that can help.

Physical security. SOHO NAS devices are small and easy to disconnect. A thief can disconnect an NAS and any external drives, drop them into a bag or box, and be out the door in a matter of seconds—taking your customer databases, presentations, or other important data with him. Install the NAS box inside of a locked closet, along with your broadband router and other networking equipment. Use tie-downs to tether the device to a shelf. This won't guarantee security, but it's a great start.

Suspect your users. Most IT professionals know that it's often the employees that wind up stealing or accidentally destroying data. So it's a bad idea to map the NAS to all of your network users by default. Instead, be selective and only map the drive to the minimum number of trusted users that really need to share the NAS data.

Disable Web access. The Web access feature allows mobile users to access SOHO NAS devices remotely from across the Internet. The NAS administrator can enable this feature with a name and password using the Web-based GUI. For example, a remote user can log in to the unit through Buffalo's Web site at www.buffalonas.com and access shared files and folders as if they were local. This feature is available on all LinkStation Live models but may require a firmware upgrade to implement. Remote access may seem like a great idea, but making data accessible through the Internet carries some risk because a remote thief with the right login credentials can steal your data from the other side of the world. Managers concerned about data security should generally disable remote access or enable remote access on only a few NAS boxes with noncritical data.

Consider encryption. Tools such as PGP NetShare or PGP Whole Disk

Encryption (www.pgp.com) can prevent unauthorized users from reading your data—even if they steal the NAS outright. Any business that uses or maintains sensitive or personally identifiable information should include encryption in its daily work process.

Don't forget backups. While some businesses will back up PCs to the NAS, many more businesses use the NAS for shared network storage. An NAS drive failure can leave data inaccessible, but this impacts all of your network users, not just a single PC user. So it's even more important to protect your NAS

It's often easier to configure each PC to use the NAS individually. This helps avoid giving NAS permissions to unauthorized users.

data with backups or use dual-disk NAS devices in a RAID 1 (redundant array of independent disks) setup, in which two drives are mirrored.

Get More From The NAS

A typical SOHO NAS device is easy to install and operate, but there are some common limitations that you'll eventually need to contend with. The biggest limitation is storage capacity, which always seems to run out no matter how much we buy. The other issue is read/write performance, which can be problematic when several users are trying to access the NAS. Let's highlight a few suggestions to overcome these issues.

Add more external storage. Even SOHO NAS boxes with internal drives

can offer one or more USB ports for supplemental external hard drives. As the internal drive(s) becomes full, it may be cheaper to add another external USB drive than to purchase and configure another NAS box.

Transfer data. If you're already using an NAS with external drives, it's a simple matter to unplug a smaller drive and attach a larger model. But remember that you may need to transfer data from the older drive to the newer one. In that case, leave the old drive connected, connect the new drive to the other USB port (even if you need to temporarily disconnect another USB drive), configure the new drive and copy all of the data over, and then disconnect the old drive (and reconnect the second drive if another was attached). This same principle holds true for NAS devices with internal SATA drives, but internal drive swapping takes more time and care.

Set ground rules for file storage. As hard drives become cluttered, it becomes difficult to locate information. Before you set up an NAS, it's a good idea to know what data will be stored there and agree on a set of shared folder names or file naming conventions that can help your users keep track of the NAS data.

Upgrade your Ethernet network. The speed of your Ethernet network can influence the data transfer speeds to and from the NAS. Common Ethernet networks run at 10/100Mbps, which is fine for most file storage, but multiple users all vying for NAS access can impair performance. When purchasing a SOHO NAS, buy a device with a GbE port. Attach the NAS to a GbE switch port and attach PCs with GbE NICs. This allows PC users to access the NAS at much higher speeds, reducing contention and smoothing any streaming media. ▌▌

BY STEPHEN J. BIGELOW

Macro Conversion

Can You Take Them With You?

Over the past several years, software companies such as Sun Microsystems and Corel have made it easier to move from Microsoft Office to an alternative office suite. Despite these advances, you should put some time and thought into the process before you jump in. Of course, the transition will be much easier if you're prepared.

What Happens To My Macros?

In addition to making sure you'll be able to convert your existing documents and remain compatible with other Microsoft users, you need to think about what will happen to the macros you have created in Microsoft Office. Macros are little bits of program in an application that users can create to speed up frequent tasks. For example, if you often have to enter a lengthy keyboard combination, you can create a macro that will achieve the same result with only one or two keystrokes.

If you have created many macros in Excel, Word, or another Microsoft Office program and you use them often in your daily computing activities, you would hate to lose them when converting to a new office suite. Whether you will be able to keep your macros when you move to a new suite depends on several factors, including the type of conversion you use and which office suite you switch to. We'll look at three of the main Microsoft alternatives to get a better idea of how your macros will be affected by each one.

OpenOffice 2.2

As you might guess from its name, OpenOffice is an open-source productivity suite. The latest version, OpenOffice 2.2, is completely free. Created and maintained by the community that uses it, OpenOffice is the very antithesis of Microsoft. OpenOffice does, however, offer some strong resemblances to the Microsoft office suite. Some of its programs—Writer, Calc, and Impress—have a look and feel that is similar to their Microsoft Office counterparts: Word, Excel, and PowerPoint. Users can open Microsoft files in OpenOffice, but some formatting features may be lost in the conversion. Built-in tools such as Document Converter will help with the process.

When it comes to macros, the news is not so good. The source code for OpenOffice is written in C++, whereas the macros you write in Microsoft Office are written in VBA (Visual Basic for Applications). It's hard to take macros written in one scripting language and convert them to function as macros written in another scripting language. OpenOffice doesn't have any built-in tools to automate this conversion process, so you'll have to do it manually.

The silver lining is that while you can't automatically convert your macros, you can edit them in OpenOffice. When you open a Microsoft Office file in OpenOffice, it will load your Microsoft macros. The macros will not work in OpenOffice, but you can view them and edit the macro code in the OpenOffice Basic IDE editor. The bottom line is that you will be able to see the VBA macro code from your Microsoft documents in OpenOffice, but from there, you must rewrite them on your own to work in that environment.

StarOffice 8

Sun Microsystems' StarOffice 8 is a polished office suite that offers many of the capabilities of Microsoft Office. Although it's not free, at $69.95 (or $35 per license when buying five to 10,000 licenses of the Enterprise edition that we'll talk about below), StarOffice costs about half of the Home And Student edition of Microsoft Office 2007, which retails for $149.99. An individual user can license the product for up to five computers and shouldn't have any trouble
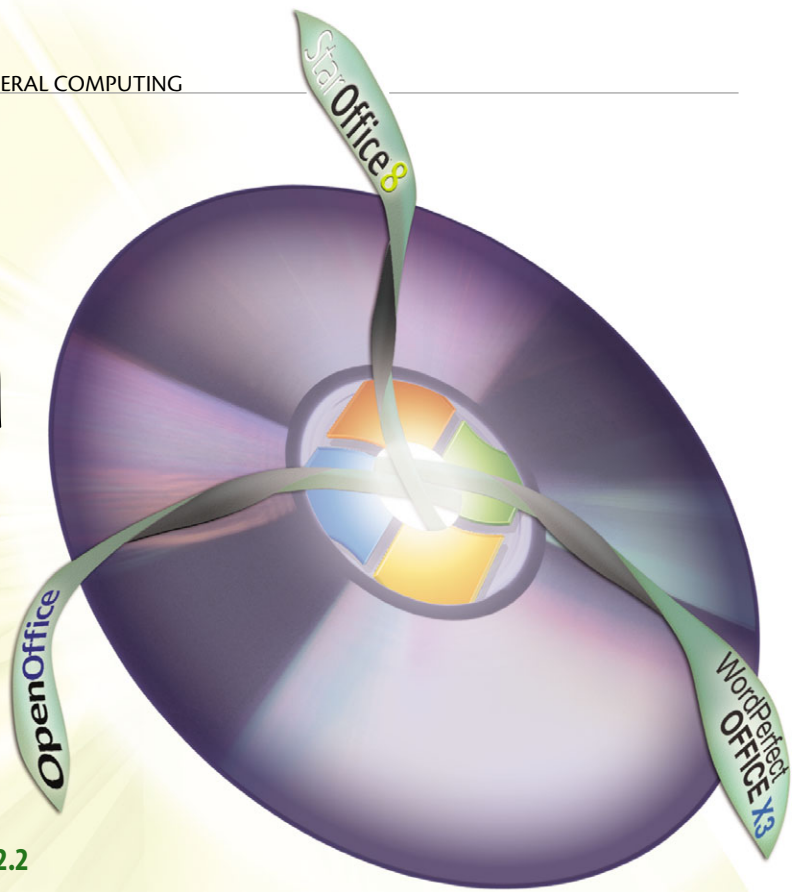
converting files to StarOffice's Writer, Impress, Calc, and Base.

Converting your macros may be a little trickier, though. StarOffice has made some major strides in catching up to Microsoft Office, but the fact remains that Microsoft macros and StarOffice macros are written in two different programming languages. Converting macros from Microsoft Office into StarOffice isn't as difficult as converting them to OpenOffice, thanks to the Professional Analysis wizard and Macro Migration wizard. Before the introduction of these tools, which are available in the Enterprise edition of StarOffice, the only way users could get their macros from one suite to another was to rewrite them or convert them by hand.

The Professional Analysis wizard helps identify items that need to be converted and possible errors you will encounter. The Macro Migration wizard moves Office macros automatically, reduces macro migration costs, simplifies the process with helpful wizards, and analyzes macro code. The wizard allows users to keep most of the macros they had created in Microsoft Excel and Word with minimal manual intervention.

The wizards are far from perfect, though, and should be seen more as helpful tools rather than a silver conversion bullet. For example, complex documents with lots of formatting usually come through the conversion process with many layout errors. If you only want to maintain a few simple macros, the wizards should be able to handle the job. Those of you with many complex macros to convert should be prepared for some manual recoding.

WordPerfect Office X3

The Corel WordPerfect Office X3 suite is the most polished of the three alternatives here. As such, it is also the

costliest. The Standard edition's price of $299.99 is still well below the $399 price of Microsoft Office 2007's Standard edition. The Corel office suite includes WordPerfect X3, Quattro Pro X3, Presentations X3, and WordPerfect MAIL.

Not sure why you'd pay so much for a Microsoft alternative when one of the main reasons to switch is to save money? Consider that the move from Microsoft to Corel is one of the smoothest. WordPerfect Office X3 supports three scripting languages—PerfectScript, VBA, and ObjectPAL (Object Paradox Application Language). VBA is only available in the Professional edition, and ObjectPAL is only available in the Professional and Student And Teacher editions.

This variety of scripting languages means that scripts and macros developed in Microsoft Office's VBA will remain fully functional in WordPerfect

Despite the fact that OpenOffice's Calc program looks similar to Microsoft Office's Excel, their macros are written in two different programming languages.

Office X3. In fact, the Corel office suite's built-in compatibility modes allow it to coexist with Microsoft Office.

Use A Backup Plan

Each alternative suite mentioned here offers some solid reasons why users would want to take the road less traveled and try something other than Microsoft Office. While each suite has

made strides toward better compatibility and ease of use in a Microsoft world, the fact remains that entirely converting your office suite environment will not always be a smooth and easy process, especially when it comes to macros.

The best approach is to start with a plan and be prepared to modify it along the way as necessary. OpenOffice advocates recommend that users view the conversion process as a good time to re-evaluate the macros they have created in Microsoft Office and decide which ones they still need. Some of the features users need macros for in Microsoft Office are available in OpenOffice without macros, so they may not always be necessary after switching suites. Purging your macros and only rewriting the ones you still need may not be as much work as you think.

The same evaluate-and-purge process is a good idea when switching to StarOffice. The macro conversion process is not a clear-cut science. Because macros built in StarOffice and macros built in Microsoft Office are based on two different programming environments, even a conversion tool such as the Macro Migration wizard is going to run into trouble once in awhile. Being prepared for the fact that you may have to rewrite some of your macros will help you enter the process in the right frame of mind. And getting help from the manufacturer is always a good idea. You might want to check out the StarOffice 8 Migration Guide from Sun Microsystems for tips and ideas on making the conversion go smoothly.

Finally, consider keeping a copy of Excel or Word on your computer so you can access those macros that just wouldn't convert when you really need them. No one needs to know you haven't switched completely. ❚❚

BY JENNIE SCHLUETER

READERS' TIPS

Regardless of their level of experience, our readers constantly come across fast, easy ways to accomplish a task (or avoid a problem), and they're eager to share with the rest of us. This page is our chance to share some of their great ideas with the rest of you.

If you've run across a way to solve or avoid a problem, fix a malfunctioning piece of software or hardware, or accomplish a computer-related task, let us (and other *Smart Computing* readers) know about it! Email your tip to **readerstips @smartcomputing.com.** Please limit your tips to 200 words or less.

Quick Web Shortcuts & Quick Photo Resizing

Create Quick Web Shortcuts

After I've searched the Web and found a site containing needed information, I sometimes have to drop what I'm doing. Although it's possible to save the address in Favorites, I prefer to temporarily save the site address using the following shortcut: In Internet Explorer, there's a lower-case "e" (or a company or product icon) at the left side of the URL Address Bar. I place the mouse pointer on the icon, right-click, and drag the icon to the Desktop. After releasing the button, choices are presented; I select Create Shortcuts Here. (You can also do this by left-clicking, but you won't see the menu options.) If the name of the shortcut icon is obscure, I right-click and give it a descriptive title. When I want to return to the site, I just double-click the shortcut. When I no longer need quick access to the site, I delete the shortcut icon from the Desktop.

Art T., Las Vegas, Nev.

Format Problem? Check For Font Substitution

Ever spend considerable time formatting a brochure or letter only to have the printed version not look quite correct (or worse, totally incorrect)? The problem could have many causes, but one often overlooked possibility is the font substitution table built right into your printer. One easy way to check is to go to the Printer Settings dialog box (in WinXP, click Start, Settings, and then Printers And Faxes) and right-click the printer. Because each manufacturer's location for the substitution table is different, you may have to look around. For example, my HP6P has Substitute With Device Font
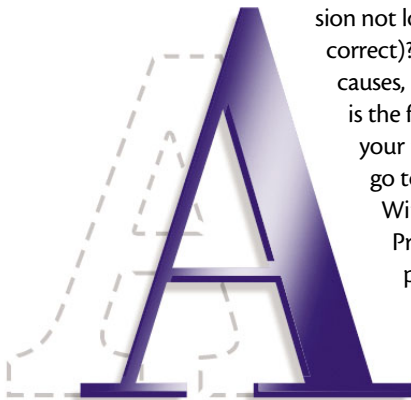
or Download A Soft-Font settings buried about four layers deep in an Advanced setting. While this may not be the cause of a particular printing not being WYSIWYG, it happens with considerable frequency; it just usually goes unnoticed because the delta between what's sent to the printer and the substituted font is not critical in most cases.

Carl M., Oakdale, Conn.

Resize Groups Of Photos Quickly, Easily

Resizing digital photos to a size that you can conveniently email can be a real pain. Some software allows you to resize one photo at a time, and if you don't make yourself a copy before you resize it, you can lose the original. However, Microsoft offers a very easy way to resize an entire group of photos all at one time and all to the same size.

I recently had to resize a batch of 890 digital photos taken by different photographers using different cameras and shooting at different resolutions. The Microsoft Resizer, one of Microsoft's free PowerToy utilities, made this job a snap.

Go to tinyurl.com /2meyw, scroll down to find the ImageResizer.exe link, and then click it to download. When given the option to Save or Run, select Run. Being very small, the utility downloads and installs very quickly. It will seem like nothing has happened, but the next time you open a folder and select one or more photos, a right-click will open a drop-down menu that includes a Resize Pictures option. Select a size and click OK.

Joel S., Holland, Mich.

Web-Based Watchdog

Set Up A Cheap & Effective Surveillance System

What's happening when you are not around? It's more than an existential question: You want to know who's broken into your home, you want to know how much care the babysitter is giving your child, or you want to make sure nobody is "borrowing" your blank DVDs. Whatever the reason, inexpensive cameras can keep an eye on your goodies, and you can choose from a suite of options for staying up-to-date, no matter where you are.

Web Cams Then & Now

The Web cam market is not new. Macintosh users in particular might remember the first widely marketed, inexpensive video camera for computers: the Connectix QuickCam, a $100 Mac peripheral that sent 16 shades of gray through a dedicated serial port. Users could capture still images or video, although the quality was primitive by today's standards. But in 1995, it was all there was. Logitech purchased the QuickCam from Connectix in 1998, and the already-successful product continues to be sold today in a variety of models and form factors.

Today's Web cams have kept their affordable pricing but offer dramatically superior image quality, including full-color, hi-resolution still pictures and smooth video. Newer cameras also offer terrific low-light performance—a must for indoor use.

The combination of low cost and sufficient performance means that these cameras are perfect for more than just video-chatting: Users are turning them into effective surveillance systems. Although these cameras don't always come with useful security software, third-party companies have stepped in with their own offerings. Features in this field include motion detection, remote viewing, notification via email, and posting of clips to a Web server. Once set up correctly, you'll have your choice of ways to stay in touch with whatever your camera is looking at.

We're going to take a look at a couple cameras—the Logitech QuickCam Ultra Vision (129.99; www.logitech.com) and the Microsoft LifeCam VX-6000 ($99.95; www.microsoft.com)—and get them working with popular software for the security-conscious.

It's worth pointing out the difference between Web cams and their more expensive (and generally more capable) siblings, the Internet camera. Michael Scott, a technical media manager at D-Link, points out the difference: "Internet cameras are standalone devices that don't need a PC . . . to work. A Web cam is an entertainment device that, with the right software, can be used as a security monitor, for a single room."

While Internet cameras are better suited for security in multiple locations throughout a home or office, the prices are considerably higher. For instance, D-Link's models start around $150 and go up to $1,000 for high-end features that include two-way audio communication and remote camera control, including tilt, pan, and zoom.

Survey The Web Cam Landscape

Web cams are available in a wide variety of sizes and shapes, although the eyeball-like orbs seem to be quite common. And unlike those early days, there are now dozens of vendors offering up these little cams. Amazon.com alone reports close to 50 models, with prices ranging from as low as $30 to almost $200.

If you're shopping for a Web cam with the intention of using it for home
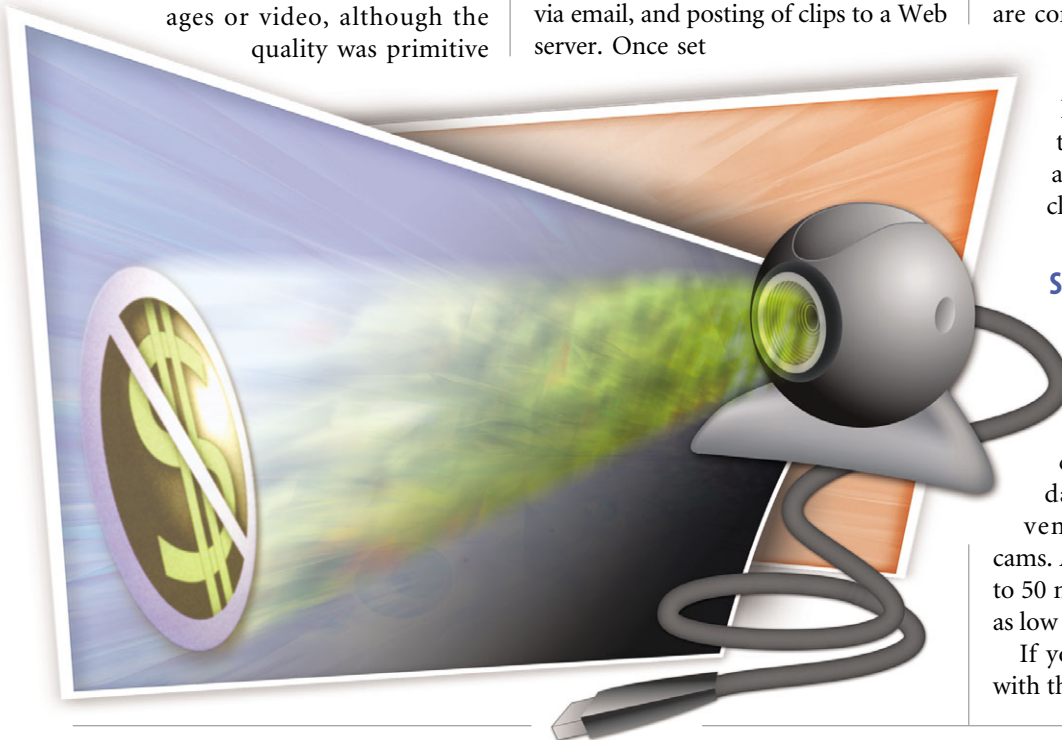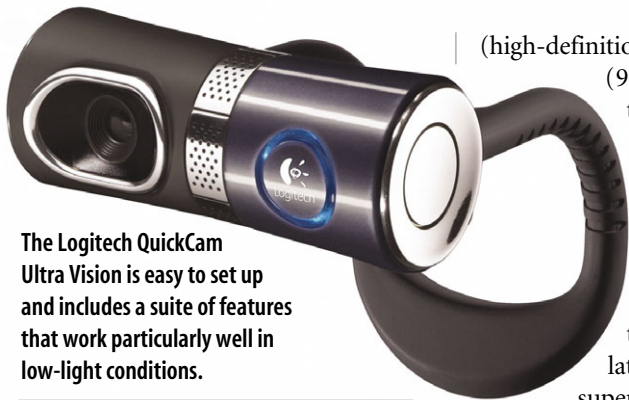
The Logitech QuickCam Ultra Vision is easy to set up and includes a suite of features that work particularly well in low-light conditions.

security, your first step should be to ensure that it will work with the surveillance software you intend to use. (For example, Digi-Watcher's Web site lists cameras that have been successfully tested with its software.)

Other considerations when choosing a Web cam include its performance in low-light conditions (there's usually no quantifiable specification for this, but those that advertise it are more likely to offer better performance), a wide-angle lens (so you can see more of the scene in question), and decent resolution (so you can actually make out the scene being captured). Of the cams reviewed here, the Logitech offers HD

D-Link's DCS-6620G is a wireless network-connected Internet camera with advanced features such as remote pan, tilt, and zoom.

(high-definition)-quality video capture (960 x 720 pixels), while the Microsoft cam only supports 640 x 480 resolution. While the video and images coming from the high-resolution camera take more time to upload (we'll talk more about this later), the quality is clearly superior.

One final consideration: Because Web cams are often marketed as a means to video chat, they can be somewhat ostentatious-looking. A smaller, more discrete camera may be more useful in avoiding unwanted attention while thieves are rifling through your collection of vintage vinyl or hauling your flat-screen TV out the front door.

Logitech QuickCam Ultra Vision. On that last regard, the Logitech Quick-Cam Ultra Vision is far from subtle—it's big and flashy, which puts it at greater risk of being spotted by the bad guys. It sits as a horizontal cylinder atop your display (working on both a laptop screen and a traditional monitor) with a shiny chrome and black finish. The camera eye is mounted on a pivot, so you can swing it a bit up or down to get the best angle. A large, flexible rubber "handle" provides a counterweight for the camera and helps hold it steady, although we found it somewhat awkward.

In use, however, this camera shines. Once installed and set up properly on top of our test computer, the Logitech Quick-Cam offered a delightfully clear image in the low-light conditions of our test environment. With its included software, the camera comes with a suite of features, including the ability to place decorative frames around you while you chat, take snapshots with the push of a button on the camera body, and record impromptu movies.

Microsoft LifeCam VX-6000. In terms of form factor, the Microsoft LifeCam VX-6000 seems like a solid choice. It's small and unobtrusive, and its flexible ring-shaped mounting mechanism is both clever and useful: You can readily set it flat on a tabletop or clip it to your laptop screen by swiveling the ring open into an "L" shape. Be prepared to play with the extra-long USB cable, though; the camera is so light that cable movements can throw the camera out of position.

Once configured, the camera was less impressive—image quality was not as good as the Logitech, particularly in low-light conditions. However, we did appreciate the wider angle on this lens, and audio quality was excellent.

Once we determined that both cameras were functional, it was time to get to our main task: spying on stuff.

Security Software Setup

For our test setup, we tried a number of software packages, but found Digi-Watcher's Watcher 2.3 ($39; www.digi-watcher.com) to be the easiest to install and set up. (Watcher is compatible with Windows 98/Me/NT/2000/XP.)

Mable Ming is the developer of Watcher. She launched the first version of Watcher in January 2001. "At that time, there were only a handful of

The Microsoft LifeCam VX-6000 offers a clever stand for desktop and monitor use.

similar vendors in the market," Ming says. "Our idea was to come out with a really user-friendly, and yet fully functional, surveillance system, mainly for home use." When asked about the market for security software, Ming relates an interesting statistic: "When we started, there were only three to five other vendors. Now, there are more than 100, and our business has been growing steadily throughout the years."

After a painless installation process, we were able to set up the product to monitor in one of three modes:

1. **Monitor:** The camera idles on the scene and starts recording when it detects motion. By default, the captured data is saved to the hard drive for later retrieval.

2. **RemoteView:** Part of Watcher's success is its pairing with RemoteView, a companion application that is free to download and use. RemoteView can be set up to connect to your Watcher-enabled computer to view the Web cam from anywhere on the Internet.

3. **Broadcast:** For a more standards-based means of monitoring your camera, the application can post images to a Web page at as little as one-second intervals.

Each option features a Play and Stop button in the main window of the application, allowing you to easily activate your function of choice. Let's take a closer look at setting up Watcher and get a taste of what it can do.

Get stealthy. The first step is to secure the computer itself. While your camera may not be obscure enough to miss, you can at least prevent would-be malfeasants from deactivating the software. By putting Watcher in Stealth mode, anyone using your computer won't even know it's running. There's an option to make the program completely hidden, resumeable only by pressing an obscure keyboard combo.

Choose what to record. While Watcher can record an ongoing stream of video, the better way is to capture video when the camera detects movement. The application allows you to set

motion sensitivity by adjusting a slider. We found the default settings were a little over-sensitive. Within 24 hours, our test setup captured a couple dozen clips. Of those, five were triggered by a flashing LED (light-emitting diode) on a device across the room.

Notify yourself. You've captured some video, but now what? As it turns out, Watcher is quite the talker, too. You can have the program post the captured images to an FTP (File Transfer Protocol) server or, if the computer is connected to a modem, call a phone number of your choice. Of course, the most common means of remotely contacting yourself will likely be email: Watcher provides this option, letting you send notification messages to any email address.

Enable RemoteView. Watcher can act as a server to the separate RemoteView application. We configured Watcher to listen for requests from RemoteView clients on port 5003. To get this to work, you will need to know your home network's IP (Internet Protocol) address. (Visit www.whatis myipaddress.com to obtain your IP address.) If you have a router, you'll also need to set it up to forward requests coming in on that port to your Watcher-enabled PC. Check your router's documentation for details. If you have a DSL (Digital Subscriber Line) or cable connection, chances are your IP address will change periodically. You can pick up a free domain name at DynDNS (www.dyndns .com) to automatically track your IP address as it changes.

Broadcast the action. Watcher offers an easier way to publish your camera's feed to the Web. It can push images to a Web server—you simply provide an FTP location along with the credentials to log in. The application gives you an HTML (Hypertext Markup Language) document template that will read images on a per-second basis, updating the
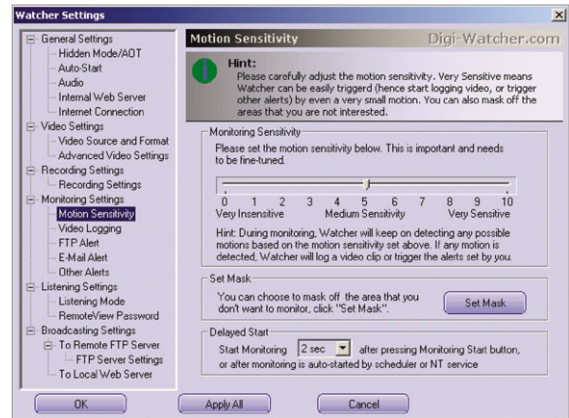
Digi-Watcher's Watcher 2.3 Web cam software offers a great deal of documentation within the comprehensive Watcher Settings window.

display on a Web page to show the latest view from your camera. Don't have a Web site? Even the lowest-cost Web hosting plans from such vendors as GoDaddy.com (www.godaddy.com) are readily affordable at up to $4 per month.

A New Insurance Policy

You can enable any or all of these services at the same time. For example, we opted out of the RemoteView option but used Stealth mode and broadcast the video to a Web site when the program detected motion, simultaneously sending an email to our cell phone. We also liked the Web server option, because, should a thief make off with your computer, the dastardly deed would be safely stored offsite.

How effective is this kind of surveillance setup? Can it protect you against theft, ensure that your babysitter is doing her job, or catch your office co-worker making off with your blank DVDs? Clearly, vigilance in this department can really pay off.

A video surveillance system is like insurance: You only have it because you might need it one day, and you hope that day never comes. With the right tools and setup, you can ensure that if the day *does* come, you'll be ready. ▌▌

BY AARON VEGH

Give Your Old Slides New Life

Digitally Preserve Your Precious Memories

O ur memories are precious, but we don't want to rely on our memory alone to preserve them. We need something tangible that captures them, and that's why we take so many slides and photographs. But soon the technology of slides itself may be just a memory.

Before that happens, don't lose everything you once so carefully recorded. Your slides don't have to sit in a dusty carousel, or worse—lie haphazardly scattered in a box deep in some dark closet. You can take advantage of current technology to ensure that you will be able to revisit your memories before they are forever lost. When you digitize your slides, you give them new life.

Know Your Options

The process of digitizing slides is similar to digitizing photos. You convert the images to a digital format and then use an image-editing program to clean up the images. But the conversion is a bit more complicated than simply placing a slide in a standard flatbed scanner and pressing a Scan button. You can use a special type of scanner or a modified digital camera, or you can pay a company to digitize your slides for you. Your best approach will depend upon your budget, schedule, hardware setup, volume of slides, and appetite for doing hands-on work. We're here to help you choose the right option.

Scan Slides & Film Negatives

Do-it-yourselfers who have the time to digitize slides themselves may find using a scanner to be their best alternative. In general, this technique produces high-quality results. Plus, if you already own a scanner, it may work well with your budget. The scanner may already have slide capabilities, or you may be able to easily modify it so that it will scan slides. There are three main types of scanners suitable for digitizing slides: film scanners, scanners with built-in slide adapters, and scanners with add-on adapters.

A dedicated film scanner is a scanner that's used exclusively for scanning photographic film (that is, photo negatives and slides) to your computer, and, in general, they produce the highest quality output of the three scanner options we cover here. Film scanners come in a wide range of features and prices. You could pay thousands of dollars for a high-end film scanner, or you could pay about a couple hundred dollars for, say, the Plustek OpticFilm 7200 film scanner ($249; www.plustek.com).

You might do best with a film scanner that falls more in the middle range, however, if your budget allows. For instance, one popular model, the Nikon CoolScan V ED (www.nikonusa.com), runs about $600 in retail stores across the country, and the quality is typically high enough for individuals or small businesses. Keep in mind, however, that if you have hundreds or even thousands of slides to digitize, scanning them one at a time with this scanner could be tedious. In that case, you might wish to invest in Nikon's next level scanner, the Super CoolScan 5000 ED, which would allow you to scan 50 slides at once—but the hardware will likely cost you more than $1,000.

If you already own a scanner, it may come with a built-in slide adapter, in which case you won't need to purchase a new product. Another advantage to this approach is that some models allow you to scan multiple slides at one time. For instance, all of the HP Scanjet models

You can use a dedicated film scanner, such as the Nikon CoolScan V ED, to digitize your slides.
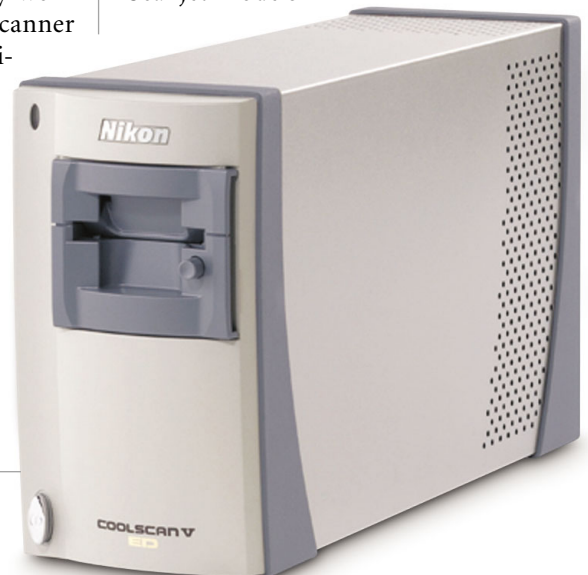
Some scanners, such as the HP Scanjets, have built-in adapters for scanning slides and negatives.

(www.hp.com), which range in price from $99 to $1,499, include a built-in device for scanning slides and negatives. To use one of these machines, instead of placing the slide directly on the scanner's bed, you place it into the scanner's adapter and follow the manufacturer's instructions.

One of the potential drawbacks of using a scanner with a built-in slide adapter is the quality of the output. For many home users, the captured image is fine for posting on a Web site, sending to family and friends, and even printing onto photo paper. In general, however, you'll find the quality isn't as crisp as that of a digital file of a slide image created via a dedicated film scanner.

If you already have a scanner but it doesn't have a built-in slide adapter, you may still be able to use the device to digitize slides. Add-on adapters, also known as film and transparency adapters, hold your slides or film negatives, and they provide the light source for your scanner to scan them. You attach the adapter to your existing scanner, and this then gives your scanner the ability to scan slides. But depending upon the model of your scanner, this may or may not be an option. Transparency adapters tend to be designed for higher-end scanners, and depending upon your slide scanning needs, it might make more sense for you to purchase a scanner with a built-in adapter instead of the add-on.

For instance, if you have a Microtek ScanMaker 1000XL or ScanMaker 9800XL, you can pick up a Microtek

Transparent Media Adapter for between $500 and $600. While these adapters are far less costly than the scanners themselves ($2,099.99 and $1,399.99, respectively), home office users may prefer to invest in the inexpensive Microtek ScanMaker s450 ($99.99; www.microtekusa.com) primarily for its built-in transparency adapter, which allows you to scan four slides at a time.

No matter which type of scanner you use to digitize your slides, keep these tips in mind. When scanning, the most important goal is to obtain a sharp image. Don't worry too much about making changes to the color, contrast, or other aspects; you can do that later with image-editing software. Also, consider how you will use the final image. If you plan to email the image, scanning at a lower resolution (600dpi [dots per inch] or so) will suffice. If you plan to print the images, such as for a 5- x 7-inch photo, you'll want to scan to a significantly higher resolution (at least 1,200dpi).

Use A Camera

Scanners tend to produce higher quality images than the other DIY methods of digitizing slides we cover in this article, but if you're happy with

Adding a transparent media adapter to your scanner will allow you to scan slides.

the quality of the images your digital camera produces, you may be able to use your digital camera to convert your slides. Just as scanners have transparency adapters, some digital cameras have slide and film adapters designed specifically for them, and some adapters are designed for a range of digital cameras. But, please note: We say you *may* (not will) be able to use a slide copying adapter, because whereas these types of products flourished just a couple of years ago, many of the major manufacturers have discontinued these accessories.

For example, Nikon formerly made a product called the ES-E28 Slide Copy Adapter for many models of its Nikon Coolpix digital cameras. This affordable accessory sold for less than $100. But these days, you won't find the item sold via the company Web site, nor will you find it in stock on most major retailer sites (such as Amazon.com); your best bet is to look to an online auction site such as eBay (www.ebay.com).

And, if you're determined to search for an adapter for your digital camera, before you begin, we recommend you carefully inspect your digital camera, read the owners manual, or contact the manufacturer to make sure the camera has the ability to accept screw-on filters. These adapters work by screwing onto the lens' filter mount on your camera, and an adapter won't do you any good if you can't attach it to your camera. If the adapter can be attached, though, you then simply place your slides into its holders and take a picture of each slide.

If you want to use your digital camera and you can't find a slide copy adapter for it, there is another, albeit somewhat clunky, option for capturing

Although some models of slide copy adapters for digital cameras have been discontinued, you can still find them on Craigslist (www.craigslist.org) and other online sites.

Sites such as DigMyPics (www.digmypics.com) will digitize your slides for you.

your slides digitally. You can project your slides onto a white background and then take photos of those slides with your digital camera. The obvious advantage to this is that it is quick—you can snap photos as quickly as the slide carousel advances—but the major disadvantage is just as obvious: Quality is almost guaranteed to be subpar.

Pay Someone Else

Given some of the drawbacks to the DIY methods described above, it's little surprise that third-party companies have stepped into the void. There's now a booming business in slide conversion services, and they have dropped into the relatively affordable range. When we investigated these services a couple years ago, the cost was surprising; paying nearly $1 per slide wasn't too far off the mark with some vendors. Today, however, the prices are dropping, and you can find credible companies that charge roughly one-fourth that amount.

Here's how one service, ScanCafe (www.scancafe.com), works. You ship the company your slides, and ScanCafe scans them for you. The company digitally edits your files, which includes removing dust and scratches, restoring and balancing color, orienting the images, and making other adjustments. You then view the slides online, and you select and pay for only the ones you want. ScanCafe, for instance,

charges 49 cents per slide (2,000dpi), with bulk discounts available. (See the "Third-Party Photo Services" sidebar for a listing of additional services and prices.) ScanCafe copies those digital files onto a CD or DVD and ships the disc back to you.

One possible advantage to handing over your slides to a company such as ScanCafe is that, in one sense, this type of procedure can save you time. The only time you spend on the process is packing up the slides, viewing them online, and paying for the service. But if you measure the time it takes from start to finish, the process may take significantly longer than if you convert the slides on your own. For example, at press time, ScanCafe was estimating a month-long turnaround time (although some other services had much quicker turnarounds). If you want your slides converted quickly, you're probably better off doing the work yourself.

Another possible advantage to using an outside company has to do with the digital file quality. If you're using a low-end scanner, the quality likely won't be as good as the quality of the files you'll end up with if you pay a third party. Because companies such as ScanCafe deal in large volumes of slides, they can more easily afford to invest in high-end scanning equipment than the average consumer.

To figure out whether going with an outside company makes financial sense, the formula is relatively simple. Take the number of slides you'd like to convert and multiply them by a number between, say 24 cents and $1. Compare that figure to the amount you have budgeted to spend on a scanner, slide copy adapter, or other method. In general, the more slides you have, the more worthwhile it may be to invest in the hardware necessary to convert the slides yourself.

Make The Best Choice

In a nutshell, the method you choose for converting your slides

Third-Party Photo Services

Dozens of companies will take your slides and convert them to a digital format. Here are four companies to investigate:

BritePix
www.britepix.com
49 cents per slide for 3,000dpi; along with your CD or DVD of digitized images, you'll also receive a free online photo album.

DigMyPics
www.digmypics.com
49 cents per slide for 2,000dpi; offers file-quality options (2,000 or 3,000dpi) and a bulk discount.

ScanCafe
www.scancafe.com
24 cents per slide for 3,000dpi; lets you select the digitized slides you wish to keep after you see the scans, so you pay only for the ones you want to keep.

MySpecial Photos
www.myspecialphotos.com
59 cents per slide for 2,000dpi; price for scanning only with no image-editing is 35 cents per slide for 2,000dpi. The company offers free FedEx return shipping on your order. ▌

will depend on many factors. If you like to explore your options and fiddle with hardware, using your digital camera may be your best bet. If you have a scanner or are willing to invest in one or invest in the necessary adaptive equipment, and you have numerous slides, we recommend you go that route. And if you just want to hand your slides off to a responsible third party, using an outside service makes the most sense. Whichever method you choose, though, you can be content knowing your precious memories will live on a while longer. ▐

BY HEIDI V. ANDERSON

Learning Linux

Open-Source Support
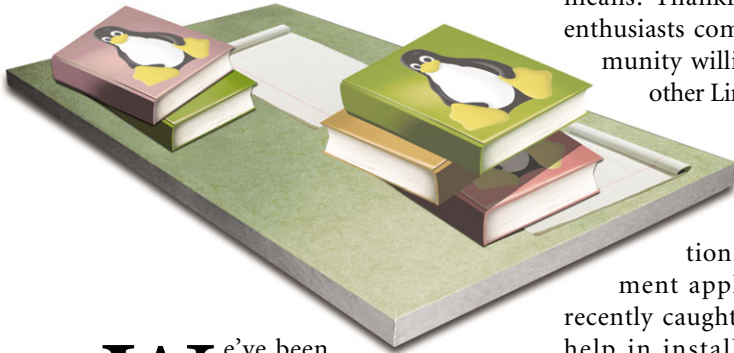
We've been through a lot over these past few months. We picked a Linux distribution, installed it, discovered a free office productivity suite that's as easy to use as that *other* one, and even printed a document. Indeed, about the only thing you don't frequently do with Linux that you frequently do with Windows is pay for the software you use.

But with all of that free software floating around, you might be wondering how those involved in actually developing the software stay in business. Sure, there are plenty of developers who write open-source software out of the goodness of their hearts, but don't let that fool you: Linux is big business. Just ask Red Hat, Oracle, Novell, or even Microsoft, which recently partnered with Novell.

For example, check out Red Hat's prices for its Enterprise Linux. The bulk of what you pay for is support. If you're an IT manager and your company is running Red Hat Enterprise Linux, you know that the good people at Red Hat will be there to answer your questions. Now, I've never talked with Red Hat's support staff, but I have to believe it's pretty good at answering tech questions about its own software.

Although that's great for Red Hat and IT managers, where does it leave you and me, the Joe Schmoes who just want to understand what "sudo bash" means? Thankfully, countless Linux enthusiasts compose an online community willing to lend a hand to other Linux users in need.

I decided to put the Linux community to work with a relatively simple question. A window management application called Beryl recently caught my eye, so I sought help in installing it. I started by visiting the most logical Web site: Ubuntu's (www.ubuntu.com). On Ubuntu's home page, I clicked the Support link that appears at the top of the page. Next, I scrolled down the Support Overview page to the Get Free Community Support section and clicked the Forums link. As it turns out, there are Ubuntu support forums for a variety of languages. I clicked the Ubuntu Web Forums link for the English forums, but those of you who are fluent in Serbian are also in luck.

Before I could post a question, I had to register. I clicked the Register link, agreed to the Ubuntu Forums rules, and clicked the Register button. The site didn't ask me for any personally identifiable information, so I quickly created a username and password for my Ubuntu Forums account. I clicked Complete Registration and then clicked Forums to return to the list of available forums.

Considering that I was an absolute Linux beginner until a few months ago, I thought the Absolute Beginner Talk forum would be a good place to start with my question about Beryl.

Ubuntu.com's forums are chock-full of just about every Ubuntu question you could possibly imagine, but feel free to ask your own.

Coincidentally, there was a **sticky thread** (this is a thread that automatically appears at the top of a forum list) titled "Looking For Beryl." The first and only post warned in no uncertain terms that Beryl is currently beta software and is likely to be unstable. However, the post contained a useful link to another forum post containing volumes of Beryl information, including how to install it. I had enough Beryl material to keep me satisfied for weeks.

Let's walk through how to post to the forums if you need help. First, go to the forum you think is the most appropriate for your question. Click Make New Post, give your post a title, ask your question in the Message field, and click Submit New Thread. Continue to monitor your thread, and hopefully you'll get the answer you need. As with any support thread, err on the side of providing too much information when asking your question.

And now that I've introduced you to a sliver of the online Linux community (similar forums exist for other distros), it's time that I continue this wild Linux adventure as a solo flight. Hopefully I've shown you that Linux is an approachable operating system alternative if you're willing to give it a try. Good luck with your own Linux pursuits. ▐▌

BY VINCE COGLEY
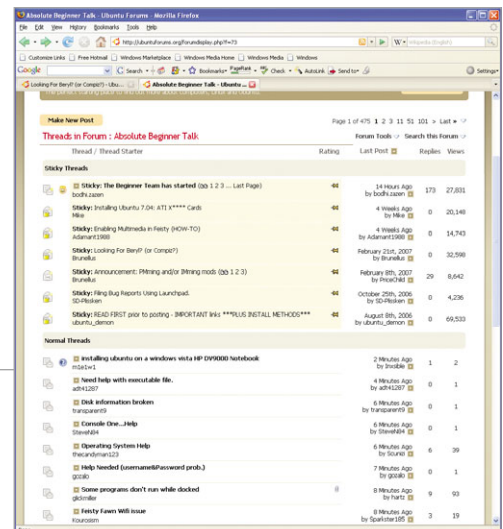
Explore
Internet Explorer's Tools Menu

Build A Better Browser

For users of Internet Explorer, the Tools menu is like a woodworking shop, containing much of the equipment you need both to build a complex and rewarding browsing experience and to make little repairs as problems arise. Fortunately, the options in the Tools menu are easier to master than a carpenter's toolkit. With a little effort and exploration, you'll be prepared to take total control of your browsing experience.

Tools Time

In Internet Explorer 6, running in Windows XP, the default Tools menu offers five options: Mail And News, Synchronize, Windows Update, Show Related Links, and Internet Options.

Depending on which IE updates and extensions you have installed, you may also see other items. Most users will have Pop-Up Blocker, Manage Add-Ons, Messenger, and Sun Java Console on the Tools menu, as well.

If you or other programs have installed helper applications or toolbars, or if you sync a Windows Mobile PDA (personal digital assistant) or smartphone with your PC, you may see other options that we won't discuss in this article. Furthermore, if you are running Internet Explorer 7, the Tools menu will be slightly different. For more on that, see the "IE7: Same Menu, Different Options" sidebar.

Mail And News

This option works with your designated email and news reader clients to let you communicate with others without leaving your browser. It sports five options: Read Mail, New Message, Send A Link, Send Page, and Read News. Most are self-explanatory; explore them to see how much time you can save.

Pop-Up Blocker

Found in later versions of IE6, Pop-Up Blocker enables IE to block the pages that pop up in new windows when you are browsing a Web site. From this option's drop-down menu, you can turn Pop-Up Blocker off (or back on) or change its settings. Adjustments include adding specific Web sites to allow and receiving an alert when IE blocks a page. You can also control the level of blocking.

Manage Add-Ons

This recent addition to IE lets you enable or disable the extensions, helper objects, toolbars, and ActiveX controls you or other programs install to extend the functionality and compatibility of IE. Examples of add-ons you may have installed are Yahoo! Toolbar, Shockwave Flash Object, and Windows Messenger. You can view currently loaded add-ons or those used by IE in the past that may not be needed now. For most users, the currently loaded view is the most helpful. If you're having problems with IE, disabling one or more add-ons may help.

Synchronize

There are three options under this item: Synchronize, Properties, and Setup. Synchronize causes Internet Explorer to synchronize with online pages you select (from an option on the Favorites menu) to be available offline. Properties lets you alter or eliminate the synchronization schedule for pages you select, decide how many pages or how much data you want to synchronize, request an email when content changes, or provide login information. Setup controls the synchronization process itself—which pages to synchronize and when.

Windows Update

Selecting this option opens the Windows Update Web site, where you can obtain the latest security patches and other enhancements for Windows or adjust settings for the update engine built into the OS (operating system).

Show Related Links

This feature works through MSN Search, using software from Alexa to find links to sites related to the one you are browsing. Many security programs categorize Alexa as spyware and remove this option, so you may not have it.

Messenger

This option signs you in to Windows Messenger, Microsoft's instant messaging client (assuming you have signed up for an MSN account; otherwise, you won't see it). This option offers no customization features.

Sun Java Console

If you see this menu item, IE is running Sun's JRE (Java Runtime Environment), which lets IE support Java applets. This option opens a window containing commands that technicians and program developers use for debugging (resolving problems with computer code). The average user won't have any use for this function.

If you do not see this option, either you are running a very early version of WinXP, or IE does not have Java support, which limits IE's abilities. The best course for most users is to fully update WinXP (use the Windows Update feature) and then obtain JRE at java.com/en/download/index.jsp.

Internet Options

Internet Options is the powerhouse of the Tools menu. It offers seven tabs—General, Security, Privacy, Content, Connections, Programs, and Advanced—that manage much of your browsing experience. Refer to the Shop Class section to learn about common tweaks that are offered by
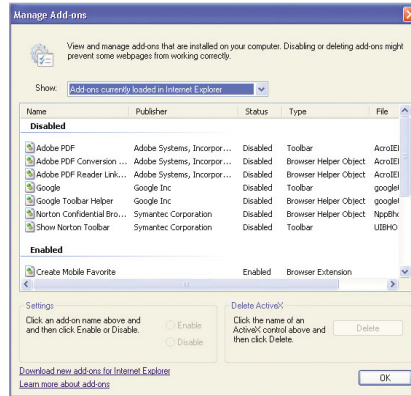
The Manage Add-Ons feature lets you enable and disable applets and helpers that extend the functionality of Internet Explorer.

the Tools menu, many of which are accessed via Internet Options.

Shop Class

You now know what the Tools menu does. Here are small craft projects that rectify common problems or enable popular customizations.

1 **Change the home page.** To change the page IE loads when it opens or you click the Home icon, open Internet Options from the Tools menu and select the General tab. Under Home Page, enter the URL of your choice in the Address field or click Use Current (if you are currently browsing that page) or Use Blank if you want to start with a fresh slate.

2 **Delete or manage cookies.** Cookies let a Web site recognize your computer and enable personalizations on return visits. They also allow a site to harvest information about your browsing habits. To delete all your cookies, return to the General tab in Internet Options and click Delete Cookies. To delete cookies individually, click Settings and View Files, select the cookies you want to delete, and click Delete This Item in the left pane.

To manage cookies, click the Privacy tab in Internet Options. As with the security settings, a slider bar lets you control what sites can store cookies. You can also choose to restrict or allow

cookies from specific sites (click Edit) or override cookie handling in specific ways (click Advanced).

3 **Disable Pop-Up Blocker for trusted sites.** You can turn Pop-Up Blocker off for your entire group of trusted sites. From Internet Options, click the Security tab and select Trusted Sites. Click Custom Level, and under Miscellaneous, click Disable in front of the Pop-Up Blocker option. You can manage the blocker individually in this way for any of IE's zones. To turn off Pop-Up Blocker globally, see Pop-Up Blocker in the preceding Tools Time section.

4 **Enable JavaScript.** If you see a message on a site that says you need to have JavaScript enabled to use the Web page, then your security setting is probably too strong. Either add the site to your Trusted Sites list (see item No. 6) or decrease your security level to Medium-Low (see item No. 7).

5 **Erase your footsteps.** Ridding yourself of IE's stored information can free drive space and protect your privacy. However, it will also slow IE down, as these files let it load Web pages more quickly on return visits. IE stores two types of data (collectively called the cache): Temporary Files (cookies, images, JavaScript code, and other files relating to Web pages) and History (links to pages you have visited recently).

To clear these files, open Internet Options from the Tools menu and select the General tab. Under Temporary Internet Files, click Delete Files. Under History, click Clear History.

If you want IE to clear your cache every time you exit the program, click the Advanced tab in Internet Options and scroll to the Security section. Select the checkbox in front of Empty Temporary Internet Files Folder When Browser Is Closed.

From the Temporary Internet Files section, you can also manage how IE handles temporary files and pages and change the number of days it maintains History. The Settings button is

particularly useful if you want to view your temporary files, change how much space they consume, or control how IE works with them.

6 **Display blocked information.** Strong security settings in IE prevent malicious scripts and other bad code from executing. If set too high, security settings also prevent you from viewing some Internet content. You can place safe sites in your Trusted Sites zone and reduce the security level for that site. (To reduce security globally, see item No. 7.)

Select Internet Options and click the Security tab. Click Trusted Sites and click Sites. Provide the Web address of the site you want to allow and click Add. If the site is not secure, deselect the Require Server Verification (Https:) For All Sites In This Zone checkbox. Click Close and then use the slider bar under Security Level For This Zone to reduce the security setting to Medium-Low or Low. You can also restrict a site using this process. Click Restricted Sites and use the slider to increase the security setting.

7 **Force a security level change.** If you try to use the slider bar to set security for the Internet zone (all sites) below Medium, IE will block the action. To work around this, click Custom Level to change the setting or enable specific components to run. However, be careful when you browse using a setting lower than Medium.

8 **Enable Java programs and/or images to load.** Empty boxes with small red Xs or graphic icons (a small white box with three geometric shapes) on a Web site usually indicate blocked applets (often Java) or images. See the previous Sun Java Console section to ensure you have Java support. For images, select the Advanced tab in Internet options. Under Multimedia, select Show Pictures and then click Apply and OK.

9 **Provide personal information.** To avoid filling out personal information repeatedly, use Profile Assistant to create a personal profile. From Internet Options, click the Content tab and click My Profile. Select one of the profiles IE provides or create a new Address Book entry for yourself.

10 **Speed up browsing.** To decrease load time of previously visited pages, open Internet Options and select the General tab. Increase the size of your Temporary Internet Files folder (click the Settings button) and the length of days in History. You can also adjust how often to update pages.

Advanced Carpentry

There are far more operations you can perform with IE's Tools menu than we have room to discuss here. Some of these include clearing AutoComplete entries, changing the default display, and instituting parental controls.

If you make changes that alter your Web settings detrimentally, you can always restore Internet Explorer to its pristine state. From Internet Options, click the Programs tab and click Reset Web Settings. ❚❚

BY JENNIFER FARWELL

IE7: Same Menu, Different Options

Internet Explorer 7's Tools menu is very similar to that of Internet Explorer 6, but there are key differences.

When you upgrade to Internet Explorer 7 (or run it in Vista), the Menu Bar may be missing altogether. Tools is present as a button on the far right, and it offers some extra options, such as Full Screen and Toolbars, not found on the standard Tools menu. To restore the Menu Bar and standard Tools menu, click Tools and select Menu Bar.

One new option on the Tools menu is Delete Browsing History, which opens a special interface that lets you delete temporary Internet files, cookies, your Internet history, form data (anything you entered into Web forms), and passwords you have supplied. (In IE7, these items have also been unified under a single option in Internet Options.)

A second new option, Phishing Filter, lets you check sites for phishing (masquerading as other sites to collect information fraudulently) and adjust settings for the Web site checking tool. A third new option, Diagnose Connection Problems, starts the networking troubleshooter. (In Vista, this option will be grayed out if you have an active Internet connection.)

Additional interesting new options are Subscribe To This Feed and Feed Discovery. These are grayed out unless you are browsing a page with links to RSS (Really Simple Syndication) feeds.

Two options, Manage Add-Ons and Internet Options, have also changed in IE7. Manage Add-Ons now offers a submenu with a Find More Add-Ons feature. (IE7, like Firefox, offers lots of optional add-ons.)

Internet Options is similar to that of IE6, but new features have appeared and others are different. The General tab now offers an option called Tabs, which controls how the program's tabbed browsing works. The Security tab in IE7 will no longer let you set security lower than Medium for the Internet zone. The Content tab now contains Feeds, which controls how IE handles feeds, and it does not have a My Profile option. ❚
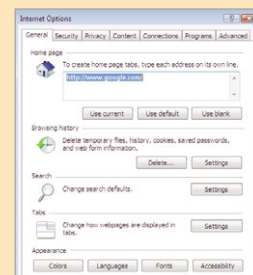
In Internet Explorer 7 for Windows XP and Windows Vista (shown is Vista), Internet Options has a few new features than those offered in IE6, but it is similar in terms of functionality.

WEB TIPS

Enhance Your Time Online

An Amazon Discount Oasis

Problem: I love checking out Amazon's outlet section for good deals, but it's a little much to wade through—there are some markdowns at only 20%. I'm really looking for the best deals.

Solution: Bargain hunters know that the discount sections in stores (even online ones) can be difficult to travel through. In the case of online giant Amazon, there's a neat site that allows you to cut through the overgrowth of the discount jungle. Jungle Crazy (www.junglecrazy .com) is a site that posts

Dig up the deepest discounts from Amazon.com.

only products on Amazon that have been discounted at 70% or more. The front page serves up the most popular products, which tend to be tech-oriented, so if you're looking for the sweet deals on home and garden products, either click that category or use the search bar for specific product types. You'll find some great deals. There's even a one-cent bin!

Package Tracking The RSS Way

Problem: I love tracking my packages, though I'm often frustrated that the tracker site hasn't updated the status of my package. I end up constantly going back to the site even though there's no update.

Solution: RSS (Really Simple Syndication) feeds solve the problem you're talking about. Browsers capable of getting these feeds let you know when a site is updated so you only check them when there's something new. Many of the big shipping sites have great tracking features, but no RSS page to bookmark. What

to do? A guy named Ian Anthony came up with an online tool posted on his isnoop site (isnoop.net /tracking). It even visually shows where your package is via GoogleMaps. It may not be as bug-free as the shipper's own tracker, but it's addictive nonetheless.

Free File Format Converter

Problem: How can I convert a PDF (Portable Document Format) into text that doesn't require a PDF viewer?

Solution: Most programs that handle a certain file type can take a file and save it as a different format. Microsoft Word can take a DOC file and convert it to TXT; iTunes can take an MP3 and re-encode it to AAC. Some formats are a little trickier, and that's where Zamzar (www.zamzar.com) comes in. This free online converter handles document, image, video, and audio conversions in a ton of formats. Simply upload the content (or point to a URL where the content is available for free), select your desired file type, and Zamzar will email you with a link to retrieve the file once it's been converted. This site is especially helpful if you want to reformat You-Tube videos to play on a video iPod.

Online Sticky Notes Get Smart

Problem: My idea of organizing things is to write everything on small sticky notes. Friends tell me I should use software instead, but it seems like too much work.

Solution: There are a number of virtual sticky note programs available, but a very interesting one is available for free online. Stikkit (www.stikkit.com) isn't just a place to jot down notes on virtual yel-

A new way to use sticky notes that better integrates your information.

low squares; it's a smart system that attempts to unify all your various ramblings on its own. Type a note about Brad's email address. Type another with Brad's phone number, and Stikkit will link this info together. The site has a collection of videos showing Stikkit in action, so you can check it out and decide if it's right for you.

Disposable Email

Problem: I can easily make a list of tasks, but I have a hard time prioritizing them.

Solution: Most task/to-do software allows you to prioritize a list only if you already know the priority of the items. CNNMoney has an interesting, free tool (cgi.money.cnn.com /tools/prioritize/priori tize_101. jsp) that aides you in sorting that mess of tasks. It's simple: You enter all of your items, and then the site presents you with a series of two items from your list. You pick which of those two are more important. Once you go through a bunch of these pairs, your list is organized.

Gone Fishin'

Bassin' USA

www.bassinusa.com

Bassin' USA has a very tight layout that helps you quickly find information about bass tournaments and fishing equipment that is for sale. The site also has articles on seasonal bass fishing tactics, tackle, lakes, and boats. Be sure to check out the daily fishing tips and forums. The interactive Bass Fishing Tournaments map is another gem: Click any state to see a list of fishing tournaments in that area. Each listing has a detailed description and all the information you need (including the entry fee) to help decide if it's the tournament for you.

Berkley

www.berkley-fishing.com

Not surprisingly, fishing equipment manufacturer Berkley has a classy, well-designed Web site that caters to serious fishing enthusiasts. The Fishing Tips & Techniques is particularly cool. Once you choose your water type (fresh or salt), the species you're going after, your destination, and the season in which you plan to fish, you'll find a detailed tips article and an illustration that shows you where to cast your lure. If you're interested in fishing tournaments, check out the Community & Events section. We also like the Grip'N Grin gallery, in which customers showcase their big catches.

Fintalk.com

www.fintalk.com

If freshwater fishing doesn't thrill you, perhaps it's time to head for the open seas. Fintalk.com caters to saltwater fishermen with a variety of resources, including tidal predictions, tips for saltwater fishing, and fishing news. We got a kick out of the Fintalk Fish Species Identifier, which has pictures of different fish species to help you identify today's catch. The site breaks its massive forums into regions and includes special forums for enthusiasts to discuss fishing equipment and boats.

Land Big Fish

www.landbigfish.com

There's more to fishing than the fish, so we're glad to see that fishing site Land Big Fish covers every aspect of a fishing trip, including the travel. In fact, the site dedicates a huge portion of its main page to outdoor travel. A Campgrounds section lists hot deals on campgrounds throughout the United States and Canada, and a search engine helps you find the outdoor businesses near your fishing trip destination. That's not to say the site doesn't cover fishing, of course. Homebound fishermen can bone up on the sport with the site's how-to articles and check out pictures of the latest big catches.

My Fishing Expert

www.myfishingexpert.com

There's an art to catching catfish. In fact, fishermen have developed different techniques for a variety of fish species. (Apparently, the ol' bobber-and-a-worm technique doesn't appeal to some fish.) The articles at this site explain fishing techniques in easy-to-understand terms and offer hints for fishing in various locations. You'll also find opinions about fishing equipment and tips for ice fishing.

TakeMeFishing.org

www.takemefishing.org

If you're thinking about taking the kids on your next fishing trip, you'll love TakeMeFishing.org. Kick off the fun by clicking your state on the interactive map and then entering your ZIP code. The site's built-in search engine will find places for you to fish and boat, as well as local marinas and fishing supply shops. The site also has some tips for helping your children learn to love the sport. If you're not leaving for the water right away, let your favorite little fisherman check out the Kids Fishing Hall Of Fame, which has pictures of kids with their catches. Don't forget to check out the Safety section for safe fishing and boating tips.

Ultimate Bass

www.ultimatebass.com

As part of our commitment to quality research, we tried to count the number of times the word "bass" appeared on this site's main page. We haven't finished counting just yet (our eyes blurred a bit after we counted 30), but we can say with absolute certainty that if you're a trout fisherman, you are in the wrong place. Whether you're looking for information about knot tying or want to learn some advanced fishing techniques (with a focus on bass fishing, mind you), you'll love the site's database of bass fishing articles. If you're feeling chatty, check out the Bass Forums, which boast hundreds of thousands of posts from fellow bass fishermen.

That's
News
To You

Finding the appropriate Usenet discussion group to match your interests can be a monumental task. So each month, we scour tens of thousands of newsgroups and highlight ones that delve into popular topics. If your ISP (Internet service provider) doesn't carry these groups, ask it to add the groups to its list. This month, we talk to some anglers online.

rec.outdoors.fishing.fly

If trout is your quarry, this is your group. Fly fishermen here post detailed stories of their favorite fishing trips and discuss fly collections.

....

alt.fishing.catfish

This active group trades catfishing tips regularly. If you're new to fishing or simply new to fishing for catfish, you'll learn some great tricks here and get your basic fishing questions answered quickly.

....

alt.fishing

Expect a mix of posts here. Fishermen occasionally ask for advice or point out techniques, but we've found that many posts tout equipment. If you're in the market for new fishing gear, you will have fun browsing these messages.

Share The Wares

Some of the best apples in the online orchard are the free (or free to try) programs available for download. Each month we feature highlights from our pickings. This month, we catch some great fishing games.

Miniclip Big Catch
www.miniclip.com/games/big-catch/en

Miniclip's Big Catch proves that you don't need complicated rules or even heavy-duty graphics to create a realistic, fun fishing game. This online game uses the Adobe Shockwave Player plug-in to put lifelike, hungry fish on your screen within minutes (seconds, if you already have the Shockwave plug-in) of starting the game.

If your Internet browser doesn't already have the Adobe Shockwave Player plug-in, you'll see a message that lets you install the plug-in right away. Next, you'll find yourself facing a beautiful lake, digital rod in hand. Casting is easy enough to do, but you'll find that you won't land any really great casts without some practice and strategy.

Once your lure lands in the lake, the game's viewpoint dives underwater so you can watch and control the lure as you reel it in. You'll see fish swim by and, in some cases, bite, in which case you'll have a fight on your hands. The game includes three lakes and lets you fish for only five minutes each time, during which you'll need to catch as many fish as you can. If you catch many fish, you'll have the opportunity to buy better lures.

FlySim 1.5.1
www.flysim.com

If you're a fly fisherman who can't get out to the stream today, this is the software for you. FlySim is a fly-fishing game that aims for intense realism, from your cast to the actions of the fish. You can choose from multiple rivers and then consult a hatch chart, which helps you determine which fly to use based on the insects that are in the area.

Don't forget to pick out your fly when you head to the river in FlySim, a realistic fishing game.

Of course, FlySim wouldn't be much of a fly-fishing game if it didn't let you choose your own flies. Whenever you're ready to switch to a new lure, you can open the Fly Box, which has dozens of lures. You can click any fly to see a larger picture of it and select a weight and tip. The software supports Windows 98 and newer operating systems. FlySim.com offers a trial version of its FlySim software and sells the full version for $24.95. (Once you purchase the game, you can unlock the trial version.) ❚

How To Frighten Birds, Mental Health Professionals & Small Children

I n last month's column, in case you haven't yet committed it to memory, I promised that I would return with a potpourri of tips, tidbits, and assorted dog-days-of-August delights. As I sit here at my Smith-Corona, two blank sheets of paper (with carbon) inserted with several deftly delivered karate chops to the carriage return, let the fesTIPities commence!

If you use Gmail (www.gmail.com) and you want to quickly email another Gmail user, enter the recipient's username in the Address field. You do not have to laboriously enter **@gmail.com**, which I think you'll agree is exhausting. So if your Gmail address is Paris@gmail.com and you want to send an email to your best-friend du jour Britney @gmail.com, type **Britney** in the TO: field and send it. Fast and simple—just like Paris and Britney!

When faced with the task of printing several Word documents, do you print one document at a time? Pulleeeze! That's sooooo DOS. To print them all at once, open the folder that contains the Word docs you want to print. Then, while holding down the CTRL key, click to select (highlight) the files to be printed. Using the CTRL key allows you to select multiple files not adjacent to each other. (If the files *are* contiguous, select the first file in the list, hold down the SHIFT key, and then click the last file in the list. All files between the first and the last files will be highlighted.) Right-click the highlighted files and select click File and Print. Word will print the files in their order of appearance within the folder.

Have you ever wondered what to do with old CDs and DVDs? As a life-long environmentalist—well, other than the time I sold Little Debbie Plutonium Cakes on eBay—I have conducted extensive research into the appropriate disposal of computers, computer-related devices, and evidence. Think of me as "The Green Columnist." When it comes to your old CDs, if you have considered burying them in the backyard, you might want to reconsider. CDs take more than 500 years to biodegrade—which begs the question: "How does anybody know that?" And if you try to burn them, think "acid rain" and the eternal wrath of Al Gore.

On behalf of this little pellet called Earth, please consider personal recycling. For example, the silver side of a CD makes an outstanding emergency reflector. Keep a few CDs in your glove box should you need to signal others for assistance. If you're a hiker, camper, or other flannel-prone person, a CD could save your life—but make sure it's not a Yanni CD. To many paramedics, that's the same as a "Do not resuscitate" order. If you grow your own veggies, string CDs together and hang them in your garden to scare away birds and mental health professionals when they come to investigate reports about a deranged person hanging CDs out in the cucumber patch.

It's a good idea to double-check checkboxes when signing up for anything on the Web or when registering software. Many times these boxes are prechecked for your "convenience," giving weasely companies permission to send spam or share your email address with third parties. Sometimes the checkboxes are not in plain view, so you may have to scroll down to be sure you don't get more than you bargained for.

For Firefox users who've experienced frustration when confronted with a document that won't fit on a printed page—a phenomenon known as "page rage"—instead of reaching for your meds, click File and Print Setup. In the Scale field, enter a percentage by which the document should be reduced for printing, such as 50% or 75% of its original size. If selecting a percentage is too stressful, select Shrink To Fit Page Width, and Firefox will automatically resize the document to fit your paper.

Finally, from our Meaningless Minutia Department: Estimates vary, but during the first quarter of 2007, approximately 200 billion emails were sent each day, give or take one or two. According to my slide rule, that breaks down to 8.3 billion per hour, 138.8 million per minute, or more than two million per second. (Yes, I do need to get a life.) ❚❚

BY MR. MODEM

Mr. Modem, (**Richard Sherman**) *is an author, syndicated columnist, radio host, and publisher. "Mr. Modem's Weekly Newsletter" provides personal responses to subscribers' computer and Internet questions, plus weekly computing tips, Web site recommendations, virus alerts, hoax warnings, and more. For additional information, visit* www.MrModem.com.

Check Out The
Tech Support Center!

The Tech Support Center at SmartComputing.com has always been *the* place to find helpful information about all of your computing troubles. Check out the Networking & Communications area to find out how to install and configure your home network properly. You'll find out how to set up your wireless network, fix wireless connection problems, and much more. Be sure to take a look at the Backups & Data Recovery section, as well. This area contains articles that explain the ins and outs of creating system backups, recovering lost data, and other backup basics. Check out these articles at SmartComputing.com's Tech Support Center today!

1. Go to SmartComputing.com and then click the Tech Support Center link on the home page.

2. Click Backups & Data Recovery or Networking & Communications.

3. Click View ALL *Backup & Data Recovery* Articles or View ALL *Networking & Communications* Articles to view articles within those departments.

Be sure to store all of your articles and information in your Personal Library to keep for future reference. Simply log in and when you find an article you would like to keep, click the Add To My Personal Library link at the top of the page. Create as many folders as you like in order to keep your information organized and accessible.

Tech Support Center

Error Messages
Solutions Knowledgebase
Basic Troubleshooting Articles
Security & Privacy
How To Get Rid Of
Backups & Data Recovery
Preventive & Regular Maintenance
Networking & Communications
Articles On How To Install … Just About Anything
Driver Education

Backups & Data Recovery

Every disk drive in existence will stop working one day; count on it. If a drive failure would be a major disaster in your life - or even just a terrible nuisance - move forward and backup.

Sample Articles:
Backup Basics
Create System Backups
Data Recovery Basics
Create Emergency Boot Disks

View ALL *Backup & Data Recovery* Articles

Preventive & Regular Maintenance

It's really pretty easy, it doesn't take very long, and it's a whole lot better than having to buy a whole new PC.

Sample Articles:
Maintenance Basics
Clean A Full Size Keyboard
Leave It On Or Shut It Down

View ALL *Preventive & Regular Maintenance* Articles

Wild Bill

On Aug. 2, 1876, "Wild Bill" Hickok was shot and killed in Deadwood, S.D., while playing poker. He was said to be holding two aces and two eights, now known as the "dead man's hand." "Wild" appears about 457 times on SmartComputing.com, "aces" 21 times, "eights" three times, and "Hickok" makes just one appearance.

Daily Tip

If you missed a Daily Tip, don't fret. You can find a link to the Daily Tip archive in the left panel on SmartComputing.com's home page.

Top Tech Support Subjects

At publication time, the top five subjects searched for at our Tech Support Center were Outlook Express, Startup Menu, Hard Drive, Safe Mode, and Red X. Visit SmartComputing.com for troubleshooting information related to these subjects.
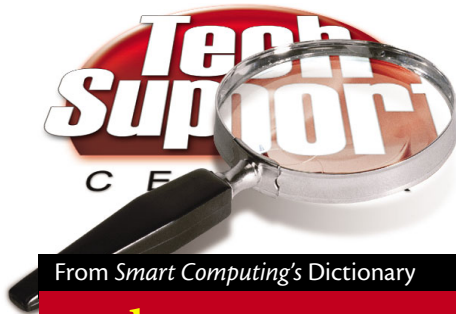
From *Smart Computing's* Dictionary

malware   Software intentionally designed for a malicious purpose, such as to erase a computer's memory or gain unauthorized access to a system. Trojan horses and purposefully system-damaging viruses are some examples of malware.

BATTLE PC INERTIA

Our Guide To Preventing Startup & Shutdown Difficulties

There are two times when setbacks are especially irritating. The first is when you are plagued with problems right from the start and have a horrible time even beginning a project. The second is when you are close to finishing with an activity, only to encounter a roadblock when the end is in sight.

These types of frustrations are especially common to computer users, because problems are most likely to occur when we start up or shut down our computers. By gaining an understanding of what happens when your PC boots and what goes on behind the scenes when your computer shuts down, you'll have a better idea of what causes startup/shutdown problems and how you can resolve them.

On Your Mark, Get Set, Oops!

When you start your computer, many processes occur. First, your computer must pass the POST (Power On Self Test), which consists of a series of tests of your computer's hardware and its most basic configurations. Often, a physical hardware problem or an improper BIOS (Basic Input/Output System) setting will cause a system to fail the POST.

Once your computer clears this initial hurdle, Windows begins to load. A damaged Windows Registry can cause a plethora of problems that can leave your system unable to start. In addition, there are many small programs and operations that launch when Windows starts. These items may slow down your system's startup, or, if a file is corrupt, it may prevent your system from starting up at all.

During startup, antivirus scans begin, programs connect to the Internet to check for software updates, antispyware software starts running, and items in your Startup folder launch. Also, if you have any spyware, adware, or other nasty malware hidden on your computer, they will likely load and consume system resources during startup.

You don't need to be held captive by all of these unknown startup processes. In "Optimize The Boot Process" on page 56, we take an in-depth look at the many things that happen when you start your computer. We examine how to identify startup processes and how to disable those that you don't need.

It's So Hard To Say Goodbye

If you think that it's infuriating to encounter problems when starting your computer, consider this: Often problems occur when you try to shut down your computer, making it difficult to close applications or even to turn off the computer at all. Many of us have at one time received an error message that indicates that an application is not responding and asks if we would like to force it to close. These errors are quite common, because any time that an application doesn't properly close and clean up its related processes, Windows may later encounter a problem when trying to clear all application processes and shut down.

Although shutdown errors are rarely as catastrophic as some startup errors, they can be an annoyance nonetheless. In "Shutdown Shakedown" on page 60, we discuss the many things that can slow down shutdown procedures and what you can do to prevent them.

A Couple Of Wrenches

Just when you thought you knew everything there was to know about startup and shutdown difficulties, Microsoft complicated matters by releasing its latest OS (operating system), Windows Vista. There are a number of ways that Vista's startup and shutdown procedures are unique. If you've already upgraded to Vista, you'll no doubt want to know more about how your OS handles startup and shutdown. In "Startup & Shutdown: Vista Considerations" on page 64, we'll tour Vista's procedures for starting and closing computing sessions and discuss what considerations you should make when troubleshooting startup and shutdown problems in Vista.

You may also encounter additional startup and shutdown difficulties if your computer is networked. This is because your system may share files, resources, and applications with other computers on the network. Even the basic process of establishing a connection with an Ethernet cable or a wireless network causes additional processes to run. Finally, in "Startup & Shutdown: Network Considerations" on page 66, we'll show you how to avoid the most common startup and shutdown hang-ups that result from networking a computer. ▐▌

BY Kylee Dickey
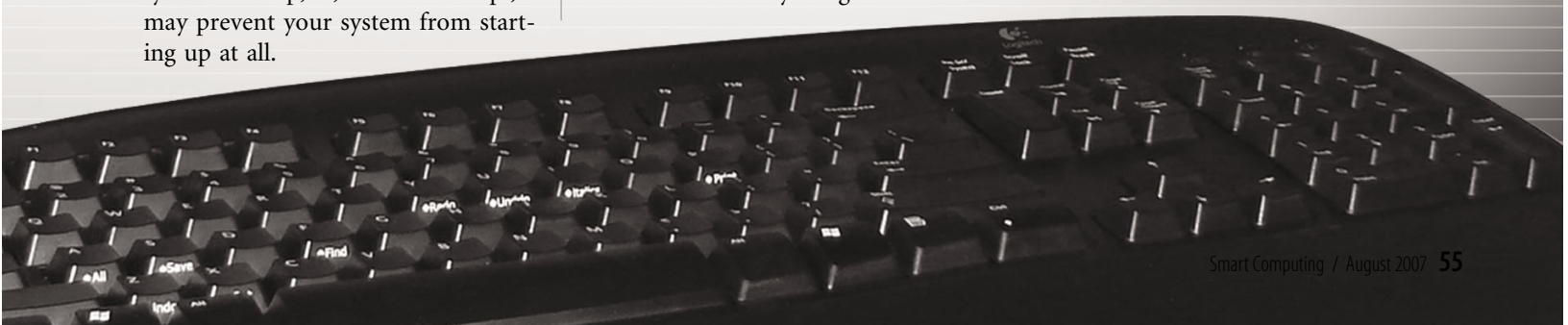
OPTIMIZE THE BOOT PROCESS

Stop Waiting For Windows

Every computer is like a busy all-you-can-eat buffet, with ravenous programs queuing up to get their share of system memory, processor power, and hardware resources. Much like a restaurant, things go smoothly during off-peak hours when one or two programs arrive every so often to fill their plates. It's when everything shows up at once that you have a real problem, and the busiest time of day for most home computers is just after you turn them on. Why is startup such a stressful time? For one thing, Windows awakens, and it's starving. The result is that your computer slows to a crawl, and the startup process takes forever.

The good news is that you can do several things to optimize a bad situation and improve startup times. You can beef up your hardware, you can streamline Windows, and you can also kick out those rowdy programs by trimming them to a bare minimum. All of these methods can shave precious seconds off the computer's startup time, and when the techniques are combined, the results can be dramatic. Before you can figure out the best way to speed up your computer, however, you must understand exactly what happens between the moment you press the power button and the moment your computer is ready to go to work.

Under The Hood

Once the computer is powered on, its BIOS (Basic Input/Output System) performs a number of basic hardware checks. (You can learn more about how this procedure affects startup times in the "Tweak The BIOS" sidebar.) Next, Windows begins loading all of the components it needs to operate, temporarily consuming practically all available memory and processor power while it boots up. During this time, Windows loads a number of services, which are programs that run in the background that you don't necessarily see in the System Tray. Instead, most services are listed as processes in the Task Manager. You can access Task Manager in Windows XP by pressing CTRL-ALT-DELETE. Windows Vista users can open it by pressing CTRL-ALT-DELETE and then clicking Start Task Manager. Click the Processes tab and then click Description

Fast hard drives, such as the Western Digital Raptor ($269.99; www.wdc.com), which rotates at 10,000rpm, can really speed up startup times.

to order the entries that way. Everything that begins with the word "Windows" is a process associated with a Windows service.

During startup, Windows also must process a large database called the **Registry**, which contains all the settings for Windows and other software installed on the computer. As programs are added to and removed from the machine, associated Registry entries called orphans are often left behind, and although they no longer do anything useful, they add to the bulk of the Registry and require time to process, which hampers the startup process.

After Windows finishes most of its startup work and the Desktop becomes visible, startup programs begin loading. These include antivirus and antispyware applications (see "The Spyware Connection" sidebar for more details)

Before fixing any problems Registry Booster finds, be sure to click Create Backup in case something goes wrong.

and programs that run in the background. Often, it is impossible to open other programs or access Windows features until all startup programs are finished loading, which can take several minutes depending on the speed of your computer's hardware, the number of programs that must load, and the amount of system resources each program needs.

Startup TLC

To test the efficacy of various startup optimization techniques, we used an aging PC that had WinXP installed for more than a year before being upgraded to Vista. This machine had dozens of programs installed and removed throughout its lifetime, accumulating enough leftovers that had to be processed during startup that the machine took over two minutes on average to grant access to the mouse cursor. It often took even longer to gain access to applications and Windows features, making this PC the perfect candidate for some startup TLC.

Hardware Upgrades

Because the main problem during startup is that Windows and startup applications fight for limited resources, it makes sense that you can appease them by providing more resources. This is done by either increasing the total amount of available resources or delivering existing resources more quickly by upgrading your hardware.

Random-access memory. System memory, also called RAM, is a good place to begin, because it is easy to install and relatively inexpensive. Every program running on the computer, including Windows, needs its own pool of memory to operate, so increasing the size of the pool lets more programs run simultaneously. If you have WinXP, consider 1GB of RAM (equivalent to 1,024MB) as a minimum for smooth performance. Vista users should consider 2GB of RAM or more for best performance. To check the amount of RAM currently installed on your WinXP computer, right-click My Computer, click Properties, select the General tab, and look for the RAM entry under the Computer section. In Vista, click the Start button, right-click Computer, click Properties, and look at the Memory (RAM) entry. When buying RAM, check the computer's documentation to find out what types of memory the motherboard supports and then buy the fastest type for a noticeable performance increase.

Hard drives. The next component to consider is the hard drive. All programs, including Windows, are stored there, so a faster drive lets the programs launch faster. Your drive should also take advantage of the fastest interface it can use that is also compatible with the computer's motherboard so that data can be delivered as quickly as possible. The manual should outline the optimal hardware supported by the computer. No matter what interface you opt for, try to use a hard drive that spins at 7,200rpm or even 10,000rpm instead of an older model that spins at 5,400rpm. The rotation speed dramatically impacts the amount of data that can be read each second, and a faster drive speeds up the boot process.

Defragmenting the hard drive can also improve startup times and overall performance by relocating related files on the hard drive so they are physically closer to one another, making it easier for the computer to access them one after the other. To run the Windows Disk Defragmenter, click Start, All Programs, Accessories, System Tools, and then click Disk

Tweak The BIOS

The BIOS (Basic Input/Output System) is a special memory chip installed on the computer's motherboard that acts as the fundamental control for all of the computer's hardware. It recognizes and initializes system memory, hard drives, the CPU, and other components, and the amount of time it takes to perform all of these checks can have a serious impact on startup times. Check the computer's manual to see if a "fast boot" option is available that bypasses some of these checks or disables startup screens to let Windows begin booting faster.

This option must be selected from the BIOS interface, which is completely separate from Windows and is accessed by pressing a function key as soon as the computer is turned on. (Each BIOS is different, so you should check the users manual for instructions on how to access it.) Be very careful when navigating the BIOS menus because any accidental changes can disable critical hardware and prevent the computer from working until the hardware is re-enabled. When in doubt, back out of the BIOS menu without saving any changes, reboot the computer, and try again. ∎

Defragmenter. In WinXP, select the drive on which Windows is installed and click Defragment. In Vista, click Defragment Now to defragment all drives. The process will take anywhere from several minutes to several hours, depending on the capacity of the drive, how full and fast it is, and how much fragmentation has taken place.

Central processing unit. The final component that can affect boot times is the processor, also called the CPU, which actually executes the programs being delivered from the hard drive and the memory banks. Unlike the previous two components, it is rarely worth the time, expense, and hassle to upgrade the CPU, so consider purchasing a new PC if your CPU is outdated and try to get one with a multicore CPU, such as the Intel Core 2 Duo, as it has the potential to execute more programs simultaneously.

Slim Down
The Windows Registry

Once your hardware is up-to-speed, the next step is to make the Windows Registry operate as efficiently as possible. As mentioned, the Registry becomes bloated with leftover entries over time. Removing these strays to make the Registry as compact as possible can make the computer operate a little more smoothly and also slightly reduce boot times.

We looked at two commercial Registry programs to see how they compared when it came to identifying and safely fixing Registry problems. You don't want a program that is too aggressive, because removing the wrong Registry entry can prevent

Windows from booting at all. Make sure any program you use lets you make a Registry backup and read the instructions carefully to note the recovery steps should something go awry.

Uniblue's Registry-Booster 2 ($39.95; www.liutilities.com) boasts an interface so simple that initiating a scan required only a single click. The program found 875 problems and errors on our aging Vista machine, and although fixing all of the problems didn't cause any trouble with Windows or the other software installed on the PC, it's a good idea to make a Registry backup before making any repairs. Click Create Backup after the scan to make a backup of the original Registry. In case a change causes problems, you can boot the computer in Safe Mode, open Registry Booster, click the Restore tab, and restore the saved Registry file to make the computer work again.

PC Tools Software's Registry Mechanic 6.0 ($29.95; www.pctools.com) is a much more aggressive program and found more than twice the number of problems on our computer compared to Registry Booster (1,715 problems, to be exact). Most of those entries were related to programs that had been uninstalled ages

Registry Mechanic identifies and fixes Registry problems; it offers a very straightforward interface and is aggressive but safe.

Deal With Unknown Programs

Turning off unnecessary applications and processes is one of the best ways to speed up boot times and also streamline the computer's overall performance. But how can you tell which programs are critical for the operation of Windows and which ones are superfluous?

Most programs in the Startup folder can be disabled without causing any problems with Windows, but doing so sometimes prevents the applications that the startup programs are associated with from working properly. Processes and services are even trickier to manage because Windows uses them extensively, and disabling the wrong one can cause the operating system to crash.

While choosing items to disable is never easy, there are a few rules of thumb that can help. When in doubt, you should leave the application or process alone, as a slower startup is much better than no startup at all. You can also avoid trouble with applications by looking for options within the software itself to disable associated startup programs instead of simply deleting the program from the Startup folder or process list. Finally, when you are looking at a list of processes to disable, always look for the words "Microsoft" or "Windows" somewhere in the description or other columns and leave those entries alone.

If you want information about a specific entry, it often is easy to find as long as you know where to look. For example, the CastleCops (www.castlecops.com) Web site has descriptions of nearly every startup entry imaginable, along with information on whether it is safe to uninstall or disable. Simply click StartupList on the left of the Web page and enter the name of the unknown item. Uniblue's WinTasks Process Library ($59.95; www.liutilities.com) is another excellent resource, as is ProcessPedia (www.ppedia.com). ∎

ago, and once again, automatically cleaning them out had no ill effects. An automatic backup of the current Registry is made before cleaning begins, so if something goes wrong, you can boot into Safe Mode, open Registry Mechanic, click Restore, choose one of the automatic backup entries, and click Restore before rebooting the computer.

Both programs shaved a few seconds off of the overall boot time, but
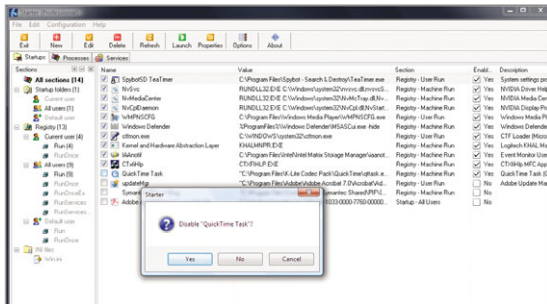
You can use Windows' System Configuration Utility to manage your startup programs, but we recommend using a third-party application such as CodeStuff Starter.
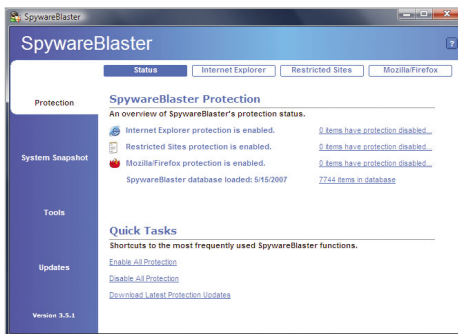
Antispyware software, such as SpywareBlaster, can prevent spyware from adding to the system's startup time.

don't expect miracles from Registry cleaners, especially if you infrequently install and uninstall software.

Remove Startup Programs

The biggest speed boost during the boot process comes from killing programs and processes that automatically

launch when Windows loads. The main issue here is figuring out which ones you can remove without interfering with Windows or other software. (See the "Deal With Unknown Programs" sidebar for information on how to get rid of programs without destabilizing Windows or causing programs to stop functioning.)

Windows' System Configuration utility is a built-in tool that lets you disable programs and services that launch at startup. To access this tool, click Start and click Run. Type **msconfig**, click OK, and choose the Startup tab. Here you will see a list of items that automatically load when you start your computer. For each item that you don't need at startup, you can simply deselect the checkbox next to the item.

Although both WinXP and Vista come with tools for managing startup programs, they don't put everything in one place and often let programs continue to reinsert themselves in the startup list even after they are disabled. Windows' integrated tools also make it difficult to figure out what each startup file does, so we recommend using a third-party tool such as CodeStuff Starter

(free; members.lycos.co.uk/code stuff), which works with all versions of Windows.

Download and install the latest version of Starter, and you'll notice that the main interface breaks programs down into three categories: Startups, Processes, and Services. Begin with the Startups tab, make sure All Sections is selected, and deselect checkboxes next to each entry in the Name list to prevent that program from launching when the computer starts. If you see an entry that you don't understand, refer to the "Deal With Unknown Programs" sidebar for tips. You can also right-click the entry, expand Search Internet, and choose one of the online services to look up information about that specific entry.

Be Vigilant

How did all these techniques affect our test machine? After completing the optimizations, the average boot time dropped from two or more minutes to an average of 45 seconds, with no extra delays between the mouse cursor becoming active and being able to access programs and Windows features. Your results likely won't be that dramatic because few people test dozens of software packages every year, as in our case, but there's no question that startup times will decrease if you follow our advice.

Just remember that startup slowdown isn't something you fix once and forget about. Keeping your system in a pristine state requires paying close attention as you install future software or notice changes in the overall responsiveness of your computer. Run your Registry utilities and startup removal programs at least once every few months, and make sure to run Disk Defragmenter and update Windows along with your antivirus and antispyware software on a regular basis. ▌▌

The Spyware Connection

Sometimes, even startup managers can't root out all of the startup programs lurking on your computer because those programs are spyware applications or viruses that are specifically designed to hide. That means you need up-to-date antivirus and antispyware software, which can root out these invaders and prevent them from loading during startup. Of course, these types of programs must load during startup themselves, increasing the boot time, but the tradeoff in terms of security and overall efficiency is worth it. Only use one antivirus product, but you can use as many antispyware programs as you like. We recommend combining a number of free tools such as Spybot Search & Destroy (www.safer-net working.org), Ad-Aware SE Personal (www.lavasoftusa.com), and SpywareBlaster (www.javacoolsoftware.com). ▌

BY TRACY BAKER

SHUTDOWN SHAKEDOWN

Don't Be Shackled By A Faulty Windows Shutdown

If you yearn for the days when your PC was brand-new and shut down in mere seconds, you're not alone. Hordes of Windows users suffer through excruciatingly long shutdown procedures—and those are the lucky ones. Others never actually experience a true shutdown, unless angrily pushing the PC's power button or yanking the power cord from the wall counts.

The good news is that you're not forced to live with a turtle-like shutdown experience. The not-so-good news is that there's not typically a quick fix to shutdown problems, unless you can identify a recent event that might have caused the problem. No worries, though, because this article will point you in nearly every possible direction to find and eventually eliminate your shutdown trouble.

Must Maintain

In general, PCs exhibiting slow shutdown times—or that won't shut down at all—tend to be victims of poor maintenance. If you never treat your PC to the latest software updates and drivers and neglect to regularly clean and defragment your hard drive, your PC may not shut down in a timely fashion.

If you're using Windows XP and haven't already done so, download and install SP2 (Service Pack 2) from www.microsoft.com/windowsxp/sp2. This massive update not only includes vital Windows security patches, but it also fixes problems related to slow shutdown. Beyond SP2, you should also regularly check Microsoft Update (windowsupdate.microsoft.com) for other important updates, because there are plenty that have been released since SP2 that help to resolve bugs and improve system performance. You should also ensure that your antivirus and antispyware programs are using the latest virus and spyware definitions.

Many casual PC users are content with installing hordes of programs, many of which are used once and never touched again. If you care about improving your shutdown time, it's time to buckle down and clean out programs you no longer use. Using Windows' Add Or Remove Programs tool (click Start, Control Panel, and Add Or Remove Programs), locate your currently installed programs that are gathering cobwebs from lack of use and then uninstall them. Do this monthly to keep your system free of resource-hogging files.

Heavily fragmented hard drives can occasionally affect shutdown times, and they almost always negatively affect overall system performance. Use the built-in Windows Disk Defragmenter (click Start, All Programs, Accessories, System Tools, and Disk Defragmenter) weekly to keep your hard drive(s) in good running condition.

Change Control

When shutdown problems emerge seemingly from the blue, this is typically a sign that the problem stems from a recent change in your system. This change could include an installed program or utility, a patch or update, a newly installed driver, or even simple configuration changes within Windows.

If your shutdown issue recently started and you lately installed one or more programs, trace those installations backward until you can determine whether one of them is at fault. To do so, use Add Or Remove Programs to remove your most recently installed program, but before doing so, take note of any settings or other changes you made within the program so you can easily implement those settings if you reinstall the program.

After uninstalling a program, shut down your system. If you do locate a problematic program, it doesn't mean you can't use it. Instead, check the

program developer's Web site for updates that might fix the problem. If no updates are available, or if updates don't solve the shutdown issue, check the help files on the site to see if the problem is addressed. Some programs employ settings by default that can interfere with the Windows shutdown procedure, but you might be able to disable the settings.

Unfortunately, not all programs can be properly patched or modified to run without affecting system behaviors. In these cases, it's best to find a replacement program. Check Open Source Windows (www .opensourcewindows.org) for links to some of the best free Windows programs available.

Driver Dilemma

If you're not in the habit of regularly updating drivers for your hardware devices, you should develop that habit, because new software and old drivers occasionally mix as smoothly as oil and water. The Custom option on the Microsoft Update Web site will notify you if any of your drivers are outdated and, if so, will offer updated drivers for you to download and install. However, manufacturers of certain devices, such as graphics cards, tend to offer drivers that are more recent than what's offered by Microsoft Update, so be sure to check the manufacturer's Web site if the Microsoft-delivered drivers appear to be causing problems.

Even if you do regularly update hardware drivers, you're bound to eventually encounter drivers that cause system problems. In fact, buggy drivers are notorious for causing PCs to freeze during shutdown. The good news is that if your new drivers are causing problems,

you can ditch them and return to using your previous drivers. Right-click the My Computer icon on your Desktop, click Properties, choose the Hardware tab, and click Device Manager. In the Device Manager, click to expand the category within which your device exists (for example, for your graphics card, click the plus [+] sign beside Display Adapters). Right-click the device listing, click Properties, and then choose the Driver tab. Click the Roll Back Driver button and follow

In addition to critical security updates, Windows XP SP2 (Service Pack 2) also includes fixes for shutdown problems. If you haven't already installed SP2, be sure to do so from www.microsoft.com/windowsxp/sp2.

the on-screen directions to uninstall the new driver and restore the previous one.

Return To Normalcy

Making configuration changes to Windows or programs can also cause shutdown problems, but these changes aren't always easy to identify, particularly if you can't remember what you changed last month, last week, or even yesterday. But if you're using System Restore, you might be able to return your system settings to a previous state and solve your shutdown problems.

To use System Restore, click Start, click Help And Support, and under Pick A Task, click Undo Changes To Your Computer With System Restore. Next, select Restore My Computer To An Earlier Time and click Next. On the Select A Restore Point screen, select a date on the calendar and click Next. Follow the on-screen instructions for applying the restore point.

One downside of using System Restore—especially if you select a restore point from long ago—is that in addition to eliminating recent settings that affected your shutdown procedure, the process will also remove other changes made since that restore point was created. With this in mind, it's a good idea to select a restore point that's closest to the current date and work backward to prevent the loss of changes that didn't actually cause any trouble.

If System Restore isn't enabled at all on your system drive, now is a good time to enable it. To do so, right-click My Computer on your Desktop, select Properties, choose the System Restore tab, click to select your C: drive (or whichever drive is your system drive), and click Settings. Deselect Turn Off System Restore On This Drive and click OK. For a more comprehensive approach to preserving system settings that you know are stable, see the "Backup Software Can Save Your Day" sidebar for tips on backup software.

Shut Down, Already!

Although the most troubling shutdown problem occurs when your PC refuses to shut down altogether, it's nearly as frustrating when your PC

eventually shuts down but takes too much time to do so.

Before shutting down, be sure to close all programs that are open and appear in your Taskbar. Although this step isn't required, it can help to explain why your shutdown procedure is slow, because some programs take longer than others to close. This also won't solve your overall time problem, because you'll still consume time in closing the programs, but again, it can help you pinpoint the source of the original problem.

Also, try closing open programs that appear in your System Tray, but close one program at a time and then try shutting down. If you identify one program that appears to be slowing down your shutdown times, visit the program developer's Web site to see if there's a patch or workaround that can fix the problem. Also, confirm that the software needs to be running in the System Tray at all.

Upon installation, some programs configure themselves to start automatically when you start Windows, but many of these shouldn't be running at all times because they unnecessarily consume system resources and add to
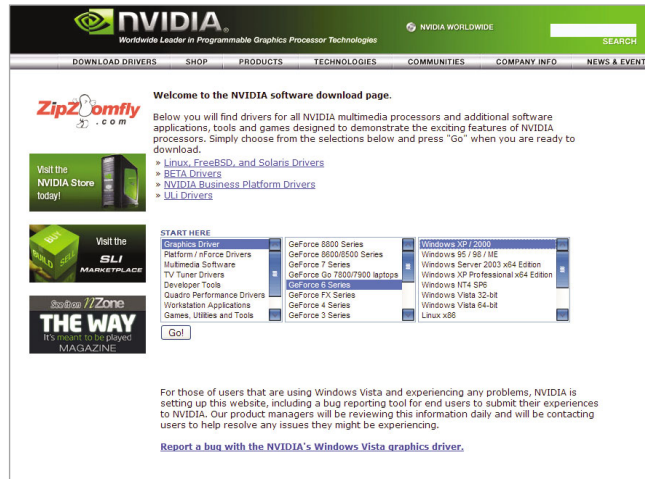
Outdated drivers can lead to shutdown problems, so be sure to regularly check your hardware manufacturers' Web sites for updated drivers.

Some shutdown issues aren't caused by system

your startup and shutdown times. Check programs' menus for an option that prevents them from automatically running at Windows startup.

If no option exists, you can use the System Configuration Utility to prevent a program from running at startup. Click Start, click Run, type **msconfig**, click OK, and choose the Startup tab. Locate the particular program in the list of startup items, click

to deselect it, and click OK. Restart your PC when prompted to do so. (For more information on removing items from the Startup folder, see "Optimize The Boot Process" on page 56.)

Of course, when you want to run the program in the future, you'll need to manually start it, so be sure to close it before shutting down. If you need the problematic program to run at all times (such as a firewall), you can try an alternative program or simply live with the longer shutdown time.

Focus On Services

As with other system-related problems, it's possible to tweak Windows into submission to get your PC's shutdown routine running quickly and efficiently. Some of these tweaks involve modifying Windows services, which are applications that run in the background and instruct components—including Windows features—how and when to run.

One service that's notorious for causing slow system shutdown is the Nvidia Driver Helper service, which provides system- and desktop-level support to the Nvidia display driver. If your system uses an Nvidia-based graphics card, try stopping this service to see if your shutdown times improve. Click Start, Control Panel,

Backup Software Can Save Your Day

Troubleshooting shutdown problems isn't all peaches and cream. Hard-to-find problems often require that you dabble with crucial system settings, which can in turn cause additional problems if you make a wrong move. This underscores the need to have a backup plan in case any of your troubleshooting procedures go awry.

By backing up your system before making

changes, you'll guarantee yourself an escape route if your troubleshooting causes its own problems. For example, consider using a product such as Acronis True Image 10 Home ($49.99; www .acronis.com), which lets you copy your entire PC, including the operating system, applications, settings, and all of your data.

The use of backup software can also serve as a means of solving

shutdown problems, at least temporarily. If you run into a shutdown problem and have a recent backup on hand, you can use the backup to restore your system. However, if the problem occurred because of a new hardware device or software program you installed, you'll need to correct the problem with the device or program if you plan on using it after restoring your backup. ∎

Performance And Maintenance (running in Category View), and Administrative Tools. Next, double-click Services and scroll down to the Nvidia Display Driver Service. Double-click it, click Stop, and click OK. If this solves your problem, download and install the newest Nvidia drivers for your card. If these do not help, return to the Nvidia Display Driver Server properties window, click Stop, and change Startup Type to Disabled. Click OK.

If you don't use Windows XP's Remote Assistance, Fast User Switch-

disabling these can prevent certain features—or Windows itself—from running. If you're not sure whether it's safe to disable a service, don't do it. You can also check the Dependencies tab in a service's Properties window to see which other services (if any) depend on that service. (For more information on Windows services and how to determine which services one can do without, refer to the January 2006 *Smart Computing* article "Turn Off Unneeded Windows Services.")

methods and still have shutdown issues, reboot Windows into Safe Mode by pressing F8 just after turning on your computer. Select the Safe Mode boot option and then once in Windows Safe Mode, shut down your PC. Because Windows runs with a minimal set of drivers in Safe Mode, if you still have shutdown issues at this point, there may be a problem with your BIOS.

Although updating your BIOS is a delicate process that requires you to carefully follow directions to avoid seriously damaging your PC, it can be necessary to clear up hardware-related problems, such as a faulty shutdown procedure. Visit the Web site of your motherboard or PC manufacturer to determine if there's an update for your BIOS. For more information about the BIOS and the updating process, visit Wim's BIOS site at www.wimsbios.com.

problems but instead by user oversight.

ing, or Remote Desktop (in WinXP Professional), you can try disabling the Terminal Services service, which is also known for slowing the shutdown procedure. In the Services window, double-click Terminal Services, change Startup Type to Disabled, and click OK.

Another problematic service is the Gear Security Service, which iTunes for Windows uses to read and burn CDs. If you find that turning off this service prior to shutdown improves your shutdown time, you can create a batch file that automatically turns off the service for you. Click Start, click Run, type **notepad** in the Open field, and click OK. In the Notepad file, type **net stop gearsecurity**. Click File, click Save As, and enter Gearstop.bat as the file name. In the Save As Type option, choose All Files, select Desktop in the Save In field, and click Save. Now, when you want to close this service before exiting Windows, simply double-click this file before doing so.

Be aware that many services are integral to the proper functioning of your Windows environment, and

Deal With Devices

Have you recently installed a hardware device? If so, and your shutdown problems appeared soon after that installation, you might have just discovered your culprit. Try uninstalling the device, including any drivers and related software, and then reinstall the device, drivers, and software.

Your motherboard's BIOS (Basic Input/Output System) is another potential culprit, but this is a little trickier to troubleshoot. If you've tried all of the aforementioned

If you've made changes recently and can't remember or otherwise undo them, try using System Restore to return your system to an earlier, trouble-free state.

Mark It Down

Some shutdown issues aren't caused by system problems but instead by user oversight. For example, if you're using dual monitors and Windows isn't shutting down, make sure both of your monitors are turned on, because Windows might be displaying a confirmation prompt on your second monitor. Until you answer that prompt (such as Do You Want To Save The Changes To Document1?), Windows will not shut down.

When you do solve your shutdown problem, be sure to make a note of your solution. Every user's PC has a unique hardware and software configuration, which means that your problem itself might be similarly unique. If you encounter it in the future, you'll be glad to have the instructions for solving it close at hand. ▌▌

BY CHRISTIAN PERRY

STARTUP & SHUTDOWN:

VISTA CONSIDERATIONS
Make A Fast OS Even Faster

One of the most advertised benefits of Windows Vista is that it's supposed to boot much faster than Windows XP. But that doesn't mean that it can't boot even faster with a little help.

Microsoft put a lot of thought and effort into designing Windows Vista to boot faster than WinXP by reworking its boot sequence. The result is an OS (operating system) that gets you to your Desktop faster than ever, so you can start working within seconds of pressing the power button.

Even though Vista is designed to boot faster than WinXP, many of the same XP tweaks can be used to shave precious seconds off Vista's startup time, such as using Windows' System Configuration Utility (Msconfig) to eliminate unnecessary items from the Startup folder. (Refer to "Optimize The Boot Process" on page 56 for information on how to use the Msconfig utility.) We'll give you a few tips and tricks on how to improve Vista's startup and shutdown, while adding a little zip to its day-to-day performance.

### Give Your Computer An Adrenaline Shot

Your computer's startup sequence can be divided between the time it takes to load Windows Vista and the time it takes to load all of your startup applications. You can reduce the amount of time needed to load your startup applications by enabling Vista's new ReadyBoost feature. ReadyBoost allows you to use a USB 2.0 flash drive or a flash memory card to temporarily boost your computer's available system memory and prefetch speeds.

If you installed Vista on a computer with limited memory or are about to undertake some particularly memory-intensive activities, Vista's ReadyBoost is just what the doctor ordered. With ReadyBoost enabled, Vista is able to store more files and applications in its prefetch cache. This helps the programs you use most often (such as all of your startup items) to load faster.

But before you start digging through your book bag for that old 64MB flash drive you got three years ago, don't bother. ReadyBoost will only work with newer USB 2.0 flash drives and faster memory cards with 256MB of storage capacity or more. Microsoft recommends that you only augment your system's memory by 25% using ReadyBoost. For example, if you allot 1GB of memory, the ReadyBoost benefit is capped at 256MB.

To enable ReadyBoost, insert your USB flash drive or flash memory card into your card reader. Once it has been installed by Vista, click the Start menu and click Computer. Right-click the icon for the device you just inserted and then click Properties. Click the ReadyBoost tab and select the Use This Device checkbox. If this option is not available, your device is not compatible with ReadyBoost and cannot be used to augment your computer's memory.
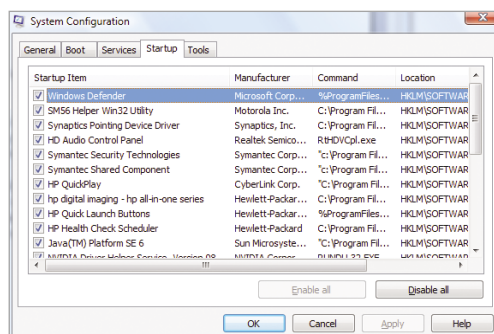
The System Configuration Utility in Windows Vista works much the same way as it does in Windows XP. Simply deselect the items you wish to eliminate from your computer's Startup folder.

Once you have selected Use This Device, move the slider all the way to the right to maximize the amount of space on the flash memory card/drive that will be allotted to ReadyBoost. Click Apply and then click OK. Note

that ReadyBoost formats your flash device for use during this initial setup, so make certain you don't have any important data on it before you begin.

If you want to stop using Ready-Boost, remove your flash drive or flash memory card from the computer. Vista manages the items it stores on the flash device so your computer does not come crashing down around you if the flash drive or card is suddenly removed. Unlike with other flash media devices, Windows Vista is constantly prepared for the sudden removal of a Ready-Boost drive. There is no need to turn off the ReadyBoost flash media drive by using the Safely Remove Hardware feature before you pull the card or flash drive out of its port.

Vista's ReadyBoost feature allows you to use a spare USB flash drive or flash memory card to give your system some extra muscle when it needs it the most.

Vista Performance Mode

Just as with WinXP, you can speed up Vista's ability to load your startup items even more by turning off much of Vista's eye candy. However, unlike WinXP, you don't have to strip all of the pretties from Vista to shorten your startup time and boost performance.

Just like in WinXP, reducing the number of gradients and fancy graphics that are loaded when your computer starts up can free up CPU time to load items that are more important to you. While Vista's performance mode will give you a similar startup speed boost, you can keep some of the nice graphics thanks to Vista's reliance on your video processor.

Vista offloads most of its new graphic enhancements, including the Vista Aero graphics, to your video processor and not your computer's main CPU. This results in Vista being a bit lighter than WinXP in terms of its graphics load.

To switch your Vista-based system into performance mode, click the Start menu and then right-click Computer. Next, click Properties. In the System control panel, click the Advanced System Settings link in the left pane and then click Continue on the security pop-up that appears. In the System Properties window, click the Advanced tab. In the Performance section, click the Settings button and deselect all items except Enable Transparent Glass (you'll only have this option if your version of Vista and your video card support the Aero interface) and Enable Desktop Composition. Both of these items are handled by your computer's video processor.

After you click Apply and OK, wait for a few seconds while Windows applies the changes. Once applied, your Windows installation will not have any of the font smoothing or fancy graphic gradients. Tweaking these performance options can shave a second or two off your startup time. You could also see a 10% performance improvement in day-to-day operations from this change alone, if you don't mind the bland interface.

Defragment Frequently

By default, Windows Vista is set to automatically defragment your hard drive every Wednesday at 1 a.m. If your computer is turned off at night, your hard drive might not get the maintenance it needs.

Because Windows Vista uses much more memory than WinXP, hard drives with 1GB of RAM or less will get a pretty good workout as Vista swaps virtual memory data in and out of the page file.

Frequently defragmenting your hard drive ensures that Vista can find information as quickly as possible and reduce wear and tear on your hard drive. Defragmenting frequently can also reduce boot times, shutdown times, and hesitations while opening and closing files and applications.

While the Windows Vista Disk Defragmenter can run regardless of what files or programs are open, it is best to run the defragmenter when you will not be using the computer. To defragment your hard drive, click the Start menu and click All Programs. Click the System Tools folder and choose Disk Defragmenter. Click Continue on the security warning and then click the Defragment Now button. If Wednesday at 1 a.m. is not a good time for your computer to perform a scheduled defrag, you can click the Modify Schedule button and change the values in the drop-down menus.

Tweak & Maintain

Even though Vista was engineered to be a speedy sprinter out of the gate, with some careful tweaking, you can improve your system's boot and shut-
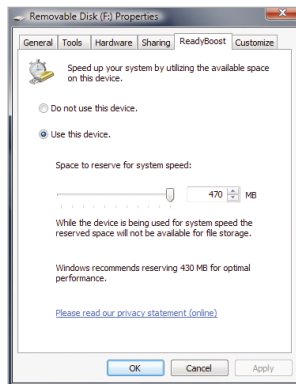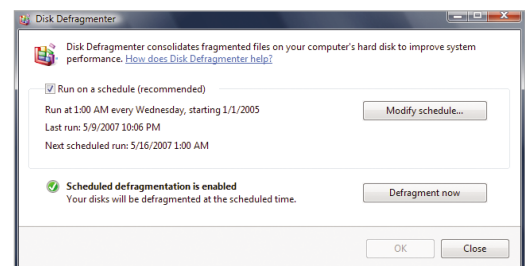
While the familiar defragmentation progress charts have been removed from the Windows Vista Disk Defragmenter, defragging your hard drive is more important than ever in Microsoft's newest operating system.

down time, as well as its all-around performance. Tweaking your computer's performance settings and staying on top of important maintenance tasks will help ensure you have the best possible experience from your Windows Vista operating system. ▐▌

BY THOR SCHROCK

STARTUP & SHUTDOWN:
NETWORK CONSIDERATIONS

Don't Let Your Connections Slow You Down

Home and small office networks are wonderful things. Shared broadband Internet connections, file folders, and printers are essential conveniences for any multiuser environment. However, always-on connections and LAN (local-area network) configurations can affect each machine's startup and shutdown routines. We'll walk through common ways that network connectivity can slow things down when booting up or shutting down, and provide some advice on speeding things up.

Before we get started, you might be wondering exactly how to tell whether network issues are involved in slow startup/shutdown times. There aren't always definitive answers, but, as with any troubleshooting process, there are some good indicators. First, shut down the machine and reboot in Safe Mode.

Press F8 immediately at startup to load Windows' Safe Mode menu and select regular Safe Mode (the first option). After loading Windows, reboot, press F8 again, and choose Safe Mode With Networking. If your computer is running fine in the first instance but slowly in the second instance, network connections are likely to blame.

Make Connections

One of a computer's first steps in connecting to a network is acquiring an IP (Internet Protocol) address. Most connections have to find a DHCP (Dynamic Host Configuration Protocol) server, receive an available IP address, and then configure other connection information. If you have your own network router or wireless access point, it's probably assigning IP addresses to each machine inside the network. If you connect directly to a DSL (Digital Subscriber Line) or cable connection, your ISP (Internet service provider) is assigning IP addresses. Check the router's documentation (or check

with your ISP) to explore options for acquiring network credentials faster by using static IP addresses, which require less time to configure at bootup. (Note that there's often an additional charge for a static IP address.)

Shut down unneeded services. If you don't connect to a network or broadband ISP, stop DHCP and other services from starting automatically each time Windows boots. From Windows' Control Panel, select Administrative Tools and then Services. Right-click DHCP Client in the list and select Properties. Change the Startup Type from Automatic to Manual. Perform the same steps for the Computer Browser, DNS Client, Messenger, Remote Registry, and Wireless Zero Configuration services.

Don't connect to network drives. Network drives are a convenient way for Windows to treat shared network folders as if they were individual hard drives. Network storage is great because it provides nearly unlimited capacity that's easy to back up. But treating network storage as a drive requires Windows to find, connect to, and check permissions for each drive every time the system starts. Unless your computer will always be able to connect to every network drive each time it boots up, the boot process will be excruciatingly slow whenever your machine can't connect

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Static DHCP
Static DHCP is used to allow DHCP server to assign same IP address to specific MAC address.

⊙ Enabled ○ Disabled

Name
IP   192 . 168 . 0 .
MAC Address
DHCP Client   [▾] [Clone]

Apply   Cancel   Help

Static DHCP Client List

Host Name	IP Address	MAC Address
☑ LIBXPL369T37	192.168.0.101	00-13-E8-03-BB-CA
☑ PHATTIE	192.168.0.100	00-14-85-BE-E4-09

Dynamic DHCP Client List

Host Name	IP Address	MAC Address	Expired Time

Your network router or ISP (Internet service provider) might be able to assign static IP (Internet Protocol) addresses to the machines on your network, speeding up the connection process at bootup.

to its network drives. In fact, if a drive is unavailable (or your permissions change), Windows takes significantly longer to give up on a connection attempt than it does to make the connection successfully.

One alternative to network drives, useful for folders you access regularly but not constantly, is simply creating new Network Places. Click Start and go to My Network Places. Select Add A Network Place from the left menu and then follow instructions in the Add Network Place Wizard. Accessing the folder through My Network Places rather than choosing a drive letter might involve an extra mouse click or two, but the time you save booting up will more than make up for the difference. Avoiding network drives also has security advantages, as viruses and other malware often seek out drives to attack but have much more limited ability to harm nonmapped network locations.

Wi-Fi Considerations

Most networking issues affecting startup and shutdown arise regardless of whether you connect to an Ethernet or wireless network. Wireless connections present a few unique challenges, however. The first is detecting and choosing among available networks. When you have a wireless connection configured, Windows automatically searches for available networks on bootup, checks your known networks, and connects to either the highest-priority network from your list or a new network with the strongest signal. Applying that logic takes time and consumes system resources. Some recent notebook computers with built-in wireless network adapters include physical switches to turn wireless networking on and off. If you're only an occasional Wi-Fi user, save time at startup and extend battery life by keeping the wireless card off until you're ready to use it. You can also keep the wireless connection disabled from the Start menu's Connect To

list, enabling it only when you want to get online.

Desktop computers with wireless NICs (network interface cards) can also waste time seeking out available wireless networks, especially in high-density areas with overlapping access points. Your wireless card's software might include the ability to create a profile defaulting immediately to a specific network. Check the manufacturer's instructions for details on configuring a default network profile.

If you control your own wireless network, limit Windows' tendency to look for and then connect to whatever network has the strongest signal by
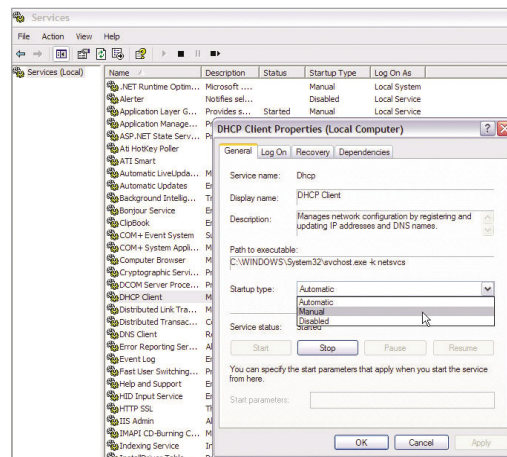
Limit the services launching automatically at startup, granting Automatic status only when necessary.

configuring your router with a non-public SSID (Service Set Identifier) and then using your wireless NIC's software to prioritize that network.

Online Startup Programs

Many startup programs require Internet access to serve their various purposes. Sometimes they "phone home" for important updates, and sometimes they're just spying on you. But waiting for each startup application to get going and make its connection can lengthen the overall boot process. In addition, background programs rarely serve useful purposes and bog down your system even after startup.

Shut 'em down. Help yourself by limiting the network-enabled and Internet-connected programs allowed to start up with Windows. Check the Startup program group inside Windows' Start menu and delete any nonessential utilities. Select Run from the Start menu, type **msconfig**, and click OK. Navigate to the Startup tab and deselect anything nonessential to your bootup process. Consider almost anything other than antivirus, antispyware, and essential Windows services expendable at startup. (For more information on eliminating items from the Startup folder, refer to "Optimize The Boot Process" on page 56.)

Windows XP Professional includes two support tools to help you or other users access and control your system from remote locations. However, if you don't use Remote Assistance or Remote Desktop, the utilities waste time at bootup when they launch. If you're not interested in logging in and controlling your computer from across the Web and don't need to have support professionals do the same, right-click My Computer and choose Properties. From the Remote tab, deselect the checkboxes in the Remote Assistance and/or Remote Desktop sections and click Apply and OK.

Watch out for other applications that commonly run at bootup, including database software, remote storage programs, peer-to-peer file sharing applications, and printer utilities. You can often configure these programs not to connect automatically, taking the extra seconds to launch them only when called upon rather than every time the system starts.

Connecting doesn't have to slow you down. If you're choosy about when and how your system seeks out network and Internet connections, you can have your connection and speed it up, too. ▐▌
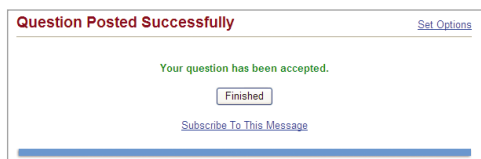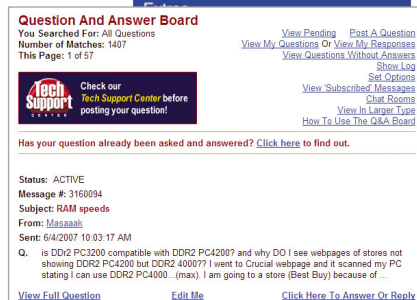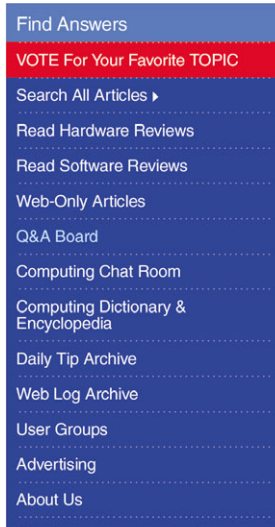
BY GREGORY ANDERSON

Q&A Board

Computers are great when they're running properly. But when you have a computing problem, finding answers can be frustrating. So if you're having trouble with Windows XP or can't find a solution to a computing question or problem, consult the *Smart Computing* Q&A Board. This subscriber-only feature is a great resource for getting quick and helpful responses to your computing problems.

Before posting a question on the Q&A Board, be sure to check out the Tech Support Center and all of its extensive resources, including an error message search, solutions knowledgebase, and troubleshooting articles.

It may also be helpful to utilize the Q&A Board search at the bottom of the page, because most likely, someone has experienced the same tech woes that you are experiencing. You can search by message number or keyword (Windows XP, for example) and sort your results by relevance or by a specific date range to make finding answers quick and easy.

Herman Melville, author of "Moby Dick," was born this month in 1819. Another famous Herman is Herman Lukoff, who didn't write any books about white whales but was, according to our online encyclopedia, "instrumental in developing the ENIAC (Electronic Numeric Integrator And Calculator), the first electronic digital computer, in the early 1940s."

Don't be afraid of the Big Blue Monster. Read up on the Blue Screen Of Death and other troubleshooting issues in the Basic Troubleshooting Articles section of the *Smart Computing* Tech Support Center.

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You Searched For: All Questions
Number of Matches: 1407
This Page: 1 of 57
View Pending   Post A Question
View My Questions Or View My Responses
View Questions Without Answers
Show Log
Set Options
View 'Subscribed' Messages
Chat Rooms
View In Larger Type
How To Use The Q&A Board

Check our *Tech Support Center* before posting your question!

Has your question already been asked and answered? Click here to find out.

Status: ACTIVE
Message #: 3160094
Subject: RAM speeds
From: Masaaak
Sent: 6/4/2007 10:03:17 AM
Q. is DDr2 PC3200 compatible with DDR2 PC4200? and why DO I see webpages of stores not showing DDR2 PC4200 but DDR2 4000?? I went to Crucial webpage and it scanned my PC stating I can use DDR2 PC4000…(max). I am going to a store (Best Buy) because of …

View Full Question   Edit Me   Click Here To Answer Or Reply

1. Log on to SmartComputing.com and then click the Q&A Board link.

2. To ask your question, click the Post A Question link in the upper-right corner of the page. (Make sure you are logged in to the site.)

3. Use the Subscribe To This Message link at the bottom of the question to be notified via email when answers are posted.

Question Posted Successfully   Set Options

Your question has been accepted.

[Finished]

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From *Smart Computing's* Dictionary

keyword

keyword

When using a search function, a keyword is the word the user wants to find in a document or documents. For example, to find all documents about dogs in a folder, a good keyword might be "dog." Some word processing and database programs let the user attach certain keywords to specific documents to make searching faster; rather than searching the entire file, the search program might only look at lists of user-defined keywords for each file.

Microsoft Word 2002

Troubleshoot Auto Functions

Microsoft Word 2002 has evolved over the years to include many new functions and capabilities. Word now can take on some of the roles of spreadsheet creator, Web page designer, and desktop publishing application.

Word increasingly can make decisions for you. Sometimes these features may get in the way of your work, however, and become a nuisance. We will look at how to make automatic formatting and correction functions work for you rather than against you.

You probably have run across at least one of these situations while working with Word:

A bulleted or numbered list appears when you press ENTER.

A Web site address is replaced with a clickable hyperlink.

The first letter in a line of text is converted into a capital letter when you didn't want it to be.

Letters or other characters are replaced by a symbol that you don't want to use. For example, (c) is replaced by the copyright symbol ©.

You can turn off the automatic text functions that get in the way with the AutoCorrect dialog boxes.

It's Not All Bad

Now don't get us wrong; Word's help in this area works mainly for good. Word will correct a lot of spelling mistakes for you by default. On the other hand, sometimes you need to guide Word instead of letting it go its own way.

This is where an understanding of the AutoFormat, AutoCorrect, and Auto-Format As You Type dialog boxes can relieve a lot of frustration. Click Tools and AutoCorrect Options on the Word Menu bar to get to these dialog boxes.

(r)	®
(tm)	TM
:(	☹
:-)	☺
<--	←
==>	→
http:\\	http://
should of been	should have been

Word will substitute symbols for certain groups of characters and correct spelling and wording by default.

AutoFormat Settings

AutoFormat lets you set the formatting that will be applied if you click Format and AutoFormat on the Menu bar. Settings in the AutoFormat box *will not* automatically change text as you type, so we'll leave this box alone for our purposes.

Click the AutoFormat As You Type tab. Settings here *will* cause changes to be made as you type text unless you turn them off by unchecking the appropriate box(es). Settings in this box and in the AutoFormat box are similar. However, the Auto-Format and AutoFormat As You Type boxes are independent of each other.

Let's look at the automatically created bulleted or numbered list example we mentioned earlier. Type an asterisk and some text and then press the ENTER key to start the next paragraph. When you do so, the asterisk may be changed to a bullet, the paragraph indented, and another bullet created.

Prevent this by changing the setting in the AutoFormat As You Type box. Uncheck Automatic Bulleted Lists. Browse the list to see which other settings are being applied and which aren't. Notice that there is a box for choosing whether to replace a Web site or network path with a clickable hyperlink, which solves the second problem we talked about above.

AutoCorrect Settings

The last two problems mentioned are easier to address than the formatting ones. Open the AutoCorrect dialog box by clicking the Auto-Correct tab. If you don't want the first character to be automatically capitalized, unclick the box next to Capitalize First Letter Of Sentences.

The case of the copyright symbol is a little more complex and is addressed in the area at the bottom of the dialog box. The scrollable pane at the bottom contains all the replacements that will automatically be made to the "incorrect" text as you type. The vast majority of replacements are for words that are commonly misspelled, or in which letters are often transposed.

If you don't want the copyright symbol to be placed in documents, you can do one of two things. You can uncheck the Replace Text As You Type box, which will prevent any replacements from being made, but that's a drastic solution. Instead, click the line in the box that contains the (C) and © characters and then click Delete.

Word sometimes tries too hard to be helpful. Now you can avoid the frustration caused by unwanted automatic formatting and correction. **II**
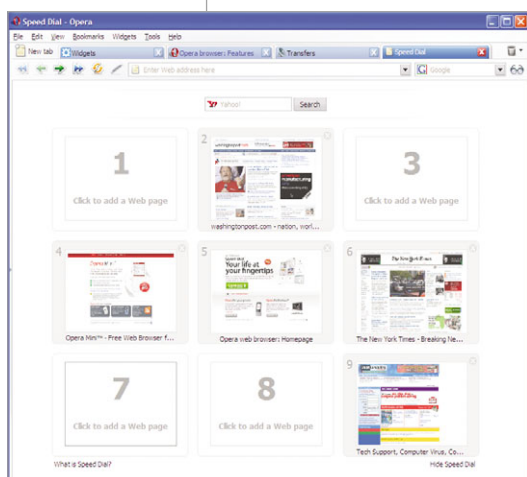
BY TOM HANCOCK

Browsers

Check Out New Features In Opera

Opera 9.2

Beginner

It doesn't get a lot of press, but Opera is a full-featured, free browser that matches Internet Explorer and Firefox in overall capability and ease of use. The developers behind Opera are probably better known these days for cell phone and PDA (personal digital assistant) browser software, but the full desktop version has not been forgotten. Opera 9.2 (www.opera.com) updates this long-standing alternative to match its rivals feature-for-feature, as well as throw in a few new innovations.

Opera 9.2, the latest version of the long-running alternative browser, adds some innovative tweaks not yet built into its better-known competitors.

Speed Dial

Opera's most visibly touted new tool is the Speed Dial, which displays thumbnails of your favorite Web sites for quick access. Each time you open a new tab, the browser fills it with small, but recognizable snapshots of Web sites you specify. Click one of the pictures (or enter the corresponding number) to load that site in the current tab.

Setting up Speed Dial is pretty simple: Open a new tab, and you'll see an array of nine numbered squares. Click one, and a small box appears where you can choose a Web page from your Bookmarks list or enter the address of a new page. Click OK, and soon a picture of that page will replace the numbered square. You can do this for any or all of the squares. To change a Speed Dial slot, click the small, round X button in the upper-right corner of the square you want to switch. You can also reorder the squares by dragging them around the screen. If you don't want to use Speed Dial at all, click the small Hide Speed Dial link at the bottom of the screen.

Similar to Speed Dial is the preview of open tabs. A busy browsing session can fill up a row of tabs until there's not much space on the Tab bar. In Opera, you can hover the mouse pointer over any tab, and a thumbnail automatically appears, showing a picture of the page in that tab. Run down the row of tabs, and soon you'll find the page you need.

Extras

Another interesting feature new to Opera 9 is integrated BitTorrent downloading. BitTorrent is a peer-to-peer protocol for distributing large files over the Internet. Generally, downloading Bit-Torrent files requires a separate BitTorrent client; Opera builds BitTorrent support right into the browser. Simply click a BitTorrent link, and the download begins the same way as any standard file.

Opera also has integrated support for widgets, or small Desktop programs similar to Microsoft Gadgets. A large collection of widgets is already available at Opera's Web site. Once downloaded, the widgets can run outside the Opera window, but they all close when Opera shuts down.

A new Content Blocker in Opera will prevent certain page elements from displaying on your screen, although it's a bit cumbersome to use. For example, on any page, you can right-click a section of text and then choose Block Content from the menu that appears. The site's text turns a light gray, while elements such as pictures remain. You can also click particular elements, such as advertisements, to mark them as blocked. Click Done in the bar that appears at the top of the screen to return to the Web page with the selected items now invisible.

Content Blocker seems limited to what you specifically mark as something that should be blocked. Even if you block an annoying ad once, another annoying "punch the monkey" type of ad might appear in its place the next time you refresh the page.

Added Security

Opera throws in some new security features, as well. The browser's Fraud Protection system attempts to warn you if a site seems to be phishing for private information. You can set up custom searches in the Opera toolbar for specific Web sites. A Site Preferences menu lets you fine-tune how Opera displays specific sites, such as whether pop-ups or cookies should be allowed.

With these and other capabilities, Opera 9.2 is a solid program with some new ideas. Firefox grabs nearly all of the non-Internet Explorer market, but it's not the only alterna-browser out there. ▐▌

BY ALAN PHELPS

Excel 2002

Using Functions

Y ou don't really need to know how to write an Excel formula any more than you need to know how to build a calculator. With Excel's functions, you simply plug in figures and let built-in formulas do the work. Functions provide the framework of a calculation, including placeholders where you drop in your specific numbers (known as the function's "arguments"). You don't, for example, need to know how to calculate the payment on a loan or how to enter the tangle of parentheses, commas, and equals signs required in Excel formulas. You just enter the appropriate interest rate, principal, and other factors into the PMT function.

Many functions are pleasantly simple. Enter =NOW() in a cell, for example, to make Excel automatically insert the current date and time. But plenty of functions are quite daunting, asking you to fill out lines like this: REPLACE (old_text, start_num,num_chars,new_text). But you'll find that many complicated functions are designed for specialists who already know something about financial calculations or statistics. The functions commonly called upon by average Excel users come with enough built-in direction to let you figure them out.

Insert Functions

When you're ready to add a function to a cell (or just browse available functions), click the cell that will contain the function. Then select Insert and Function (or press SHIFT-F3 or click the Formula Bar's Insert Function button). The Insert Function dialog box provides a handful of tools to help you find the right function and decipher the alphabet soup of the arguments.

If you know what you'd like to do but don't know what function to use (or don't even know whether one exists for the job you have in mind), start in the Search For A Function box at the top of the dialog box. Here you can enter a plain-language job description that's as vague as something like "count certain numbers." Excel produces functions that are the closest matches. With our sample query, the top result is COUNTIF, which

For whatever calculation you have in mind, Excel probably has a function already set up. You can find it through the Insert Function dialog box.

scours a range of cells, counting only those that meet criteria you set.

Click a function's name in the list to see a short description of it at the bottom of the dialog box. For a full description and instructions on using the function effectively, click Help On This Function to open Excel's help file on the topic. Once you find the function that you want to use, click OK to insert a blank form of it into the selected cell.

Fill Out Functions

The next dialog box handles Function Arguments, providing empty fields for you to fill in. You can close this dialog box and fill out the function like any other formula on the Formula Bar, but this would mean ignoring a handful of tools that greatly simplify using the function. As you click within each Argument field of the dialog box, for example, a short description of that argument appears in the dialog box. You can easily fill in the Range argument that's part of many functions by dragging your mouse pointer across a block of cells on the worksheet. Minimize the Function Arguments box by clicking the Grid icon beside the argument field.

As you fill in each argument, Excel shows the current result of the formula at the bottom of the dialog box. Note that arguments aren't always numbers, but are sometimes cell references, logical arguments (such as TRUE and FALSE), and even other formulas and functions.

Just like the Insert Function dialog box, this box includes a link to Help On This Function. This is worth clicking almost any time you're trying out a new function. The Help file explains the function and each of its criteria. Plus, you'll find an example that makes it easy to see how to structure arguments and what to expect from the function.

Remember that as official as functions seem, they're plain old formulas at heart. So, you can edit them at any time to tweak their performance. Click the cell containing the function to see it on the Formula Bar. Click in the bar to change any number among the arguments. If you'd rather edit the function using the Function Arguments dialog box (which may be easier for steps such as choosing new ranges), click the cell and then the Insert Function button on the Formula Bar. ▌▌

BY TREVOR MEERS
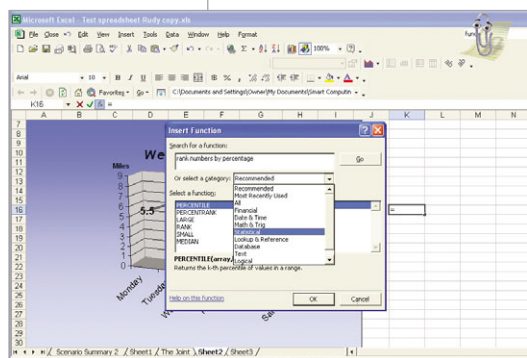
Corel WordPerfect 11
Create Text Columns

Y ou don't need a fancy desktop publishing program to create a professional-looking newsletter or other document that utilizes columns. WordPerfect comes with four text column styles. Once you get the hang of it, it's easy to put columns wherever you want them.

Architectural Styles

When you want to divide text vertically on a page, you need to use columns. WordPerfect allows you to choose from several different types: Newspaper, Balanced Newspaper, Parallel, and Parallel With Block Protect.

Just like its namesake, text in Newspaper columns flows down the left column to the bottom of the page (or column break) and continues at the top of the next column.

Balanced Newspaper columns are essentially the same idea as Newspaper columns, but WordPerfect adjusts the columns so that all are the same length.

If you're using WordPerfect to design your resume, you may want to look more closely at Parallel columns. With this style, text is grouped across the page in a row, so that the next row starts below the longest column of the previous row. For example, if the left column reads "Computer Renaissance, 1998 - 2001" and the right column describes your responsibilities at that job, the next row's entry for "Geek Squad, 2001 - present" should begin after the right previous "Responsibilities" column ends. Parallel is also a good choice for script writing.

Parallel With Block Protect builds on the parallel idea by taking it one step further: It makes certain that automatic page breaks don't separate rows of columns that belong together. If one must move to the next page, both move.

Adjust the number, style, and width of columns in the Columns dialog box.

This is a three-column Balanced Newspaper style.

Column Building

Click where you want the columns to begin. If you're designing a newsletter, for example, you'll probably want to click beneath the banner or title. Next, go to the Format menu and choose Columns or click the Columns button on the toolbar—the one with three columns of blue lines—and choose Format.

When the Columns dialog box appears, choose the number of columns you'd like from the corresponding box. Next, choose the style of column in the section marked Type Of Columns—this is where those four options come in. Click on one to see a small preview. Column width and spacing are a bit trickier. If you're unsure, you can leave the settings in the WordPerfect default and see how you like it. If you prefer to adjust them yourself, there are a few things you should know.

WordPerfect displays a width box for each column specified in the Number Of Columns field. You can adjust the width of each column individually. To change widths, click the Width box next to each column and either type a new value or use the box's up or down arrows instead.

You'll notice the Fixed box next to Space is always checked. In most cases, you'll want uniform white spaces to make your document easy to read. To vary column separation, uncheck that box.

If you've chosen Parallel or Parallel With Block Perfect as your column type, WordPerfect also allows you to specify the number of blank lines between rows. Click the up or down arrows in the Extra Line Spacing In Parallel Columns box to adjust this. Then click OK to create the columns.

Wrap It Up

To discontinue columns, click where you want them to end and again choose Columns from the Format menu. In the Columns dialog box, click Discontinue.
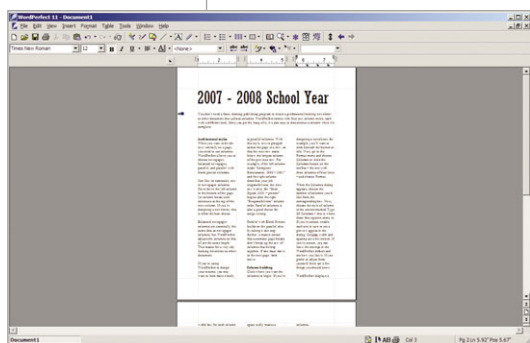
To delete the columns click the top-left corner of the first column. Open the Columns dialog box again and click Discontinue.

If you have a lot of text to print, a little experimentation with columns is one way to help make your document look more polished. ▌▌

BY ANNE STEYER PHELPS
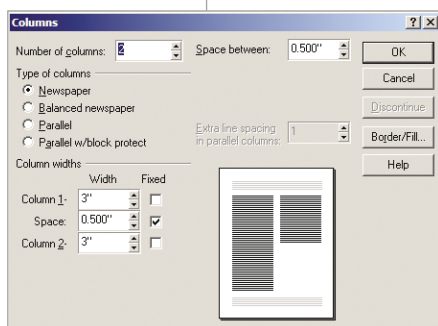
Security
Verify & Test Your Backups

Simply creating backups is no guarantee of protection. You must take the next step to verify and test your backups on a regular basis. This column highlights some of the common issues with backups and offers guidance that can help keep your backups efficient and consistent.

Create & Store Backups

We back up our data because we have to—we cannot afford not to. This is particularly true for small businesses that might go under if they ever lost their important records. So, the first test is to find your backups. If you need more than 30 seconds to locate a backup, we need to talk about backup consistency and proper storage.

If you don't know where your most recent backup media is, you're obviously not making backups frequently enough. Consider the data that you're trying to protect and decide on a regular backup schedule. For example, if you actively bank and handle your financial matters on your computer, you might want daily backups of Money or Quicken files. If you work with digital photos or music, you could probably get away with weekly backups of your digital scrapbook or MP3 download collection. You can use your backup software to schedule regular backups.

Next is storage. Label backup media carefully and store it in an appropriate location, such as the family fire safe. If you run a business, you might consider sending the backup to a separate location. Remember, your backup is totally useless if it's wiped out by the same fire, flood, or other disaster that destroyed your computer system.

Windows XP's Backup Utility offers wizards to streamline the backup and restoration process.

Verify Backups

It's amazing how many backups fail for one reason or another. Maybe the media failed, maybe you ran out of space and couldn't back up everything on the same disc, or maybe there was some other system or backup glitch. Therefore, it's important to confirm that the backup is completed successfully.

Using the Windows XP Backup Utility or other commercial backup software, such as NTI's Backup NOW! 4 ($39.99; www.ntius.com), to create a formal backup volume is a pretty easy process. The software will report on the backup cycle's success or failure, and it can typically verify the backup volume as it's being written.

If you're copying important files to other media, such as a USB hard drive, thumb/flash drive, or CD/DVD, a complete verification is a little trickier. Windows will tell you if there's not enough space, but opening each file to check it might not be practical. In this case, you could simply do a spot check. For example, check the media in My Computer and open several of your most critical files.

Accommodate Changes

New software versions and new hardware configurations can interfere with the readability of your backups. For example, if you upgrade or change the backup software, old backups made with the previous backup software may no longer be readable. New drive installations may also make your backups difficult to read. You should perform a complete backup before and after you make a major system change, and all subsequent backups should be suited for the new system configuration.

Restoration Drills

Backups are useless unless you can actually restore and use them, so it's worth performing an occasional restoration drill—going through an actual recovery process with a recent backup. A drill is commonly performed every three or six months.

For a simple data copy (for instance, copying key files to a flash drive), a restoration drill may simply involve inserting the backup media, copying the key files back to their original location(s) on your main computer, and then opening those recovered files as you normally would. Restoring a formal backup volume is a bit more involved, because you need to launch the backup software and restore the entire backup volume. Restoration drills can be disruptive because your computing power is used to move data, so many business owners wait until after-hours to attempt a drill. ▐▌

BY STEPHEN J. BIGELOW
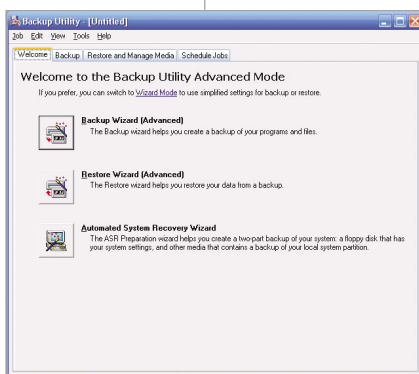
Quick Tips

Secrets For Succeeding In Common Tasks

BY STEPHEN J. BIGELOW

Microsoft Word 2003

Question: I need to edit a lot of documents. Is there an easy way to make replacements without having to find each instance that I have to fix?

Answer: Microsoft Word provides a global Find And Replace feature that will search a document to find every instance of a particular word or phrase and then replace each instance
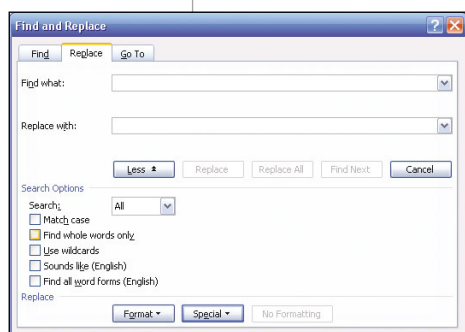
Microsoft Word offers a Find And Replace feature that can locate and correct words, phrases, and punctuation.

with the correction that you specify. Open a Word document, click Edit, click Replace, and select the Replace tab. Enter the faulty word, phrase, or punctuation in the Find What field and then enter the correction in the Replace With field. Click the Find Next button to locate the errors—if you want to correct this, click Replace. Otherwise, click the Replace All button to fix every instance of the error.

However, the Replace All feature can change partial words, as well. Suppose that you want to change the word "con" to "can." The Replace All button will change words such as "control" to "cantrol." To prevent this, select the Find Whole Words Only checkbox (you may need to click the More button to see this option).

Broadband Speed

Question: I'm always looking for more Internet speed. Should I consider upgrading my broadband router to a model with Gigabit Ethernet ports?

Answer: Plugging a PC with a standard 10/100 Ethernet NIC (network interface card) into a Gigabit Ethernet switch port on your new broadband router buys you absolutely nothing—the fastest that your PC can move data is still only 100Mbps (megabits per second). If you really want that PC's network connection to scream, you should upgrade its NIC to a Gigabit Ethernet card.

It's a similar problem if you have multiple PCs tied to an older 10/100 hub and cabled to the Gigabit Ethernet port. The older hub is hobbled to 100Mbps. In that case, you might also consider upgrading the hub to a GbE device.

Also, remember that even a 10 times faster Ethernet connection on your home network won't necessarily give your Internet browsing experience the same acceleration. Busy Web sites and other congestion across the Internet can still impair your surfing performance.

Security Updates

Question: How often should my security software update? Is there a way I can switch from automatic to manual downloads?
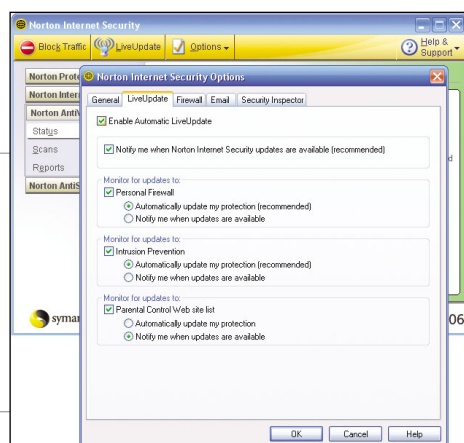
It is possible to disable your security software's automatic updates to prevent unexpected downloads or hard drive activity while working with other programs.

Answer: The update frequency depends on your security provider. It's common to see daily updates to security software, but some PC users may find frequent automatic downloads to be disruptive—especially if using a dial-up connection. You can generally disable the automatic updates. For example, in Norton Internet Security, launch the control panel, click the Options button, and then select Norton Internet Security. Select the LiveUpdate tab, deselect Enable Automatic LiveUpdate, and then click OK. Once you've disabled automatic updates, you'll need to use the LiveUpdate button manually to ensure that your protection is kept up-to-date.

USB Devices

Question: I attached my USB keyboard and mouse to USB ports on my LCD monitor, but the keyboard and mouse don't work now. Isn't this supposed to work?

Answer: USB keyboards and mice can be problematic when used through USB hubs like the kind in your monitor. When Windows starts, it typically tries to find the keyboard and mouse first and then checks local (motherboard-based) USB devices before looking for remote hubs. If the keyboard and mouse are not attached to the motherboard's root USB ports at start time, the operating system may not recognize them properly (if at all). As a rule, keep the USB keyboard and mouse attached directly to USB ports on the motherboard. Leave the remote USB ports for other peripheral devices, such as USB cameras, joysticks, and so on.
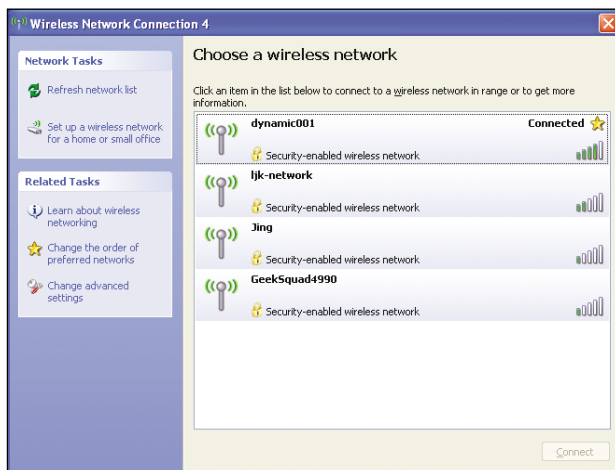
Wireless Network Security

Question: I'm moving to a condo. Should I worry about security on my wireless network?

Answer: A laptop or desktop with a wireless NIC can detect wireless networks in the area, gauge their signal strength, and allow you to connect to any network available with only a couple of mouse clicks. Any neighbor within range can potentially "see" your wireless network and connect to it. This will certainly take bandwidth away from you and your other users. In extreme cases, your neighbor might actually be able to access shared data on your network. Condominiums are particularly troublesome because there may be many PC users within a limited area, each with their own network.

It is absolutely worth the extra effort to implement WPA (Wi-Fi Protected Access) or even the older WEP (Wired Equivalent Privacy) encryption on your wireless network. In addition, you can also "hide" the name of your wireless network by turning off the SSID (Service Set Identifier) broadcast feature in your wireless router or access point. This will keep your wireless network off the list and prevent other users from knowing it's even there.

It is important to secure your wireless networks with WPA (Wi-Fi Protected Access) or older WEP (Wired Equivalent Privacy) encryption when other potential users are nearby.

Ink Cartridges

Question: How many printed pages should I get out of my color ink cartridge? It seems like I never get what the manufacturer promises.

Answer: It's important to remember that the page life quoted for ink cartridges and toner are only general guidelines. The actual number of pages can vary dramatically among users because there are so many variables. For example, many of your images may use more of one color than others, and this will consume ink unevenly—possibly exhausting the ink cartridge prematurely (assuming that all of the color inks are in the same cartridge). The number of images that you print will impact ink consumption, as well. Image-rich pages will use a lot more ink than text-only pages. Even paper type can affect ink consumption. For example, glossy photo papers get their bold color by using far more ink, so you'll go through ink faster when printing photos vs. churning out text and occasional graphics on plain paper. Ultimately, there is no single uniform number of pages that you should expect; cartridge life will vary by user depending on particular printing needs.

Compiled by Kylee Dickey
Graphics & Design by Lindsay Anker

Battle Of The Buses:

USB & FireWire Square Off

Most, if not all, of your external connections are probably USB, and they hum along so smoothly there is really no need to think about them, right?

Actually, that's not quite true. You can certainly expect years of trouble-free operation from each of your PC's device connectors, whether they are the ubiquitous USB or its cousin, IEEE 1394 (commonly called FireWire). However, each of these connection types is best-suited to a particular situation. We'll cover the similarities and differences between the two here and offer some advice about which to use in different situations. (There are other types of external device connectors for PCs, but for this article, we'll stick with USB and FireWire.)

Similarities

Both USB and FireWire connect to your PC's main circuit board via a particular type of data pathway—a serial bus. Initially, serial connections were too slow for anything but mice and dial-up modems, but advances in the technology enable both USB and FireWire to employ serial connections and still be fast.

Also, USB and FireWire both support hot-swapping, meaning you can connect and disconnect devices without shutting down your PC. Both are backward compatible, so later devices and connections work with earlier releases. Each also supports data transfer at theoretical rates of 400Mbps (megabits per second) or greater. FireWire 800 (its predecessor is the slower, but more common FireWire 400) is the fastest at around 800Mbps.

However, neither FireWire nor USB devices attain the theoretical limits of the technologies. USB connections create a branched, "speak when spoken to" network, whereby each device communicates only when the host requests the communication. This scheduling load requires more processing power from the host and slows transfer speeds. The maximum throughput of USB devices is rarely more than half the theoretical limit and many devices operate at much lower speeds (3 to 20MBps is common).
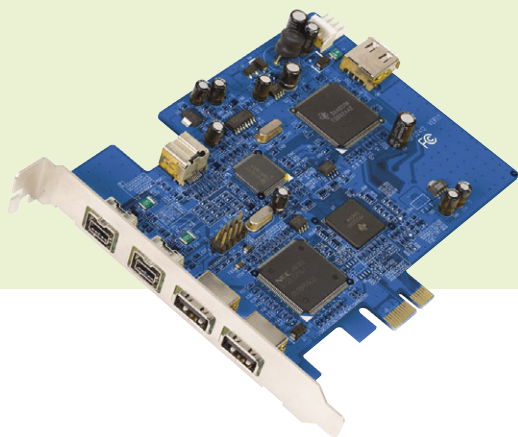
A combo USB/FireWire card, such as this one from Belkin, gives users the best of both worlds.

A desktop, front-access USB hub (shown is a Belkin model) gives users easy plug-and-play access to USB ports.

Differences

A FireWire node beats USB when working with single devices, attaining sustained throughput of up to 41MBps. It becomes increasingly less efficient as more devices join the network. Furthermore, FireWire networks distribute the total bandwidth among themselves as needed. A USB host, due to its master-slave design, can manage multiple devices efficiently, allocating bandwidth to high-priority devices as needed.

Consequently, data-intensive devices (hard drives and video players are prime examples) are generally fastest on dedicated FireWire connections, especially when working with large files.

Extensive networks, especially those composed of mainly low-bandwidth devices, are faster on USB.

Another difference between FireWire and USB is connectivity. USB networks can connect up to 127 devices to a single port using multiple hubs nested up to five hubs deep. FireWire ports can accommodate up to 63 devices, in either branching networks or end-to-end configurations. However, FireWire networks can use repeater nodes to extend the distance between a device and its PC to 1,000 feet (FireWire 800 only). USB, on the other hand, has a limit of about 80 feet without an intervening PC or Ethernet cable.

Because of its agile and speedy handling of large files, FireWire is a good choice for video recorders, hard drives, and card readers (shown is a card reader from SanDisk).

Removable flash drives, such as this model from Samsung, almost always employ USB technology.

What's The Connection?

USB connectors come in several shapes and sizes, and having the right type of connector for your device is important, as they are not interchangeable without adapters. The original connector (at the top in the example) is the one most of us recognize—the one we see on the front of our PCs. Mini-A and mini-B (bottom) connectors appear on devices with restrictive space requirements, such as digital cameras and smartphones. They're about one-quarter the size of their standard counterparts, but offer exactly the same functionality and connectivity to other USB devices. (Note that they are very similar in appearance, but are not interchangeable. It's easy to get mini-A and mini-B cables mixed up.) Micro USB connectors (not shown) are even smaller; they will start appearing this year. Developers implemented them for mobile phones and other devices whose increasingly slim size made them too tight for even a mini-USB port.

FireWire connectors also come in different configurations (two in this case; 4-pin [on the bottom in the example] and 6-pin [on the top]). However, the difference is even more significant than with USB. A 4-pin connector lacks the ability to take power from the PC, as these two wires support an electrical current. Therefore, devices with 4-pin connectors generally need their own power supplies. Sony's i.Link technology uses the 4-pin connector; all other FireWire devices require the 6-pin connection.

What To Do When . . .

You Can't Uninstall A Program

I f only uninstalling a program were as simple as taking out the trash: bag it, stuff it in the can, and roll it to the curb.

In theory, uninstalling a program from your PC should require even less effort than that. As we'll explain, several options are at your disposal for removing programs, and using them is easier than preparing for garbage pickup. Problems arise, however, when the uninstall process stalls and your computer says it couldn't remove the program. Or when the uninstall process leaves bits of the program scattered about your PC.

You wouldn't tolerate such sloppiness from your waste removal professionals, and you shouldn't have to put up with it in your computing either. So try these suggestions for problem-free program removal.

Program Uninstaller

The first method you should use to uninstall a program is the uninstaller that comes with the software. This is especially important when you have multiple programs from the same software maker installed on your system.

For instance, we have several Symantec programs installed on our PC. As we contemplated removing one of them (Norton Confidential), we learned that this program shares components with four other Norton programs: Antivirus, Internet Security, Personal Firewall, and SystemWorks. In this situation, it's preferable to let the manufacturer's uninstaller sort through which files and folders can be removed and which need to stay. And, as we'll explain later, it may be necessary to remove other programs first and then reinstall them.

To open the uninstaller, click Start and All Programs and find the program you want to remove. In that folder, you may see an uninstall tool. If so, click on it, and the uninstall process will begin. It will differ from program to program.

You may encounter an instance where the uninstall tool cannot remove all of the files or folders associated with the program. If this happens, click Details in the screen that informs you of the error so you can see which items couldn't be removed. Then you can remove them manually.

Windows' Removal Tool

The Add Or Remove Programs tool in the Control Panel (click Start, Control Panel, and Add Or Remove Programs) is a good option for program removal in these situations: if a program's uninstaller isn't listed under the Start, All Programs menu or if the item you want to remove is a small application that you downloaded from the Web, and it's not listed under All Programs.

Add Or Remove Programs is easy to use. Just find the name of the application on the list, click on it, and click Remove. Again, the actual removal process will differ from program to program.

Sometimes Add Or Remove Programs may leave behind program-related files or folders that you want deleted, as well. You'll have to hunt for those yourself and remove them manually, as we'll explain later.

If necessary, manually delete files using the Registry Editor to clear out lingering elements of a program you're trying to uninstall.
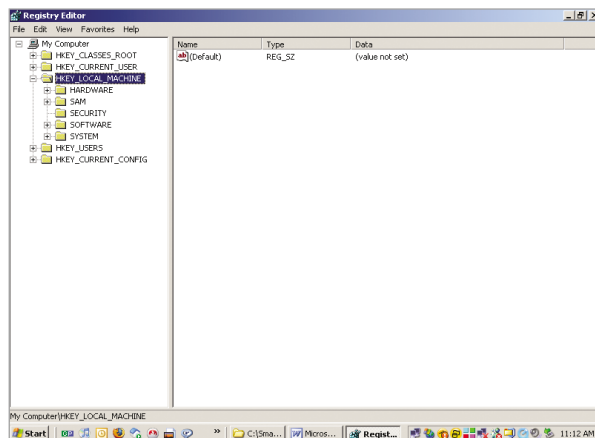
Also, you may encounter an instance where Add Or Remove Programs can't remove a program. You may get a message that says Windows couldn't remove the program because part of the application was in use or something similar. And you're left scratching your head, because you likely already closed the application.

That problem may occur if you are trying to remove an application that runs in the background, such as a security program. If this happens, try to end the background processes. Press CTRL-ALT-DELETE to open the Windows Task Manager and click the Processes tab. You'll see a lot of executable files at work. Look for and highlight the one(s) associated with the program you'd like to remove and click End Process. Try to use Add Or Remove Programs again.

Using the Add or Remove Programs tool is easy, but it's not 100% effective for deleting all programs.

Dust Off The Disc

It's easy to turn to Add Or Remove Programs or the uninstallers found under All Programs first. But you may need to insert the installation disc (if you have one) and follow the uninstallation wizard found there.

As we said, the manufacturer of the program knows best how that program should be removed. In the situation we described above, with trying to remove Norton Confidential, it makes much more sense to ask Symantec, not Microsoft, to uninstall its own program. Besides, the Norton folders found under All Programs on our system don't list an uninstaller, so that's another reason to use the disc.
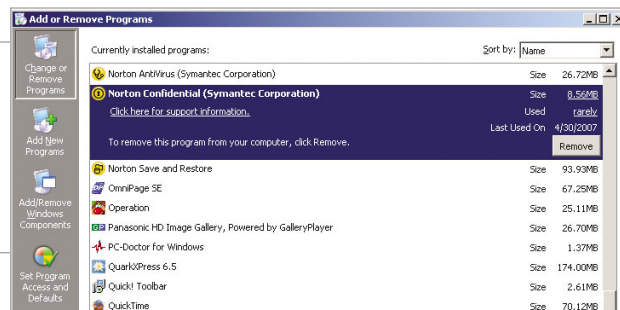
Sometimes the disc will undo every step of the installation process. If this is the case, you're in luck, because you won't have pieces of the program

lingering on your computer. Nor will you have to mess with the Registry, which should always be your last resort (see below). Though the installation disc won't always offer a simple solution, it's worth a try. Should you encounter any problem using the installation disc to remove a program, or if for some reason you don't still have the disc, try the next step.

Get Help Online

It's not uncommon to find program removal help at the Web site of the software developer.

For removing a small program or applet, such as the Google Toolbar, the instructions will normally be short. This Web page (www.google. com/support/toolbar/bin/answer.py?answer =9231&topic=915) gives a three-step process for uninstalling the toolbar.

You'll find lengthier instructions for removing bigger programs, such as the ones we found at a McAfee help site for uninstalling SecurityCenter (ts.mcafeehelp.com/faq3.asp?docid=7 1525). Before you attempt to uninstall the program, you also have to uninstall all other McAfee products. According to McAfee, if you uninstall those other programs, you should then be able to use Add Or Remove Programs to uninstall SecurityCenter.

If Add Or Remove Programs doesn't work, the site describes how to manually delete all ADF files first, then use the Microsoft removal tool.

Similarly, the method Symantec offers on its Web site for removing one of its Norton programs results in the

removal of *all* Norton programs—from 2003 through current release—from your PC. At this page (service1 .symantec.com/SUPPORT/tsgeninfo.ns f/docid/2005033108162039) you'll find the Norton Removal Tool, which you can download and run from your PC.

A Manual Fix

If you think that using an uninstaller, Add Or Remove Programs, or the installation disc didn't result in a clean uninstall, you can check the Registry for remnants of the program.

First, back up your Registry. Click Start and Run, type **ntbackup.exe**, and click OK. Follow the instructions. (*NOTE: It's possible that the Backup utility is not yet installed on your system, in which case you'll need to install it from your WinXP installation disc.*)

Now, on to the Registry Editor. Click Start and Run and enter **regedit** in the Open field. Click OK. There are three key places to check for lingering elements of the uninstalled program. They are:

- HKEY_LOCAL_MACHINE\SOFT-WARE. Find the folder named for the program you removed, if it's still there, and delete it.
- HKEY_CURRENT_USER\SOFTWARE. Again, find the folder of the program you've removed and delete it.
- HKEY_LOCAL_MACHINE\SYSTEM\ CURRENTCONTROLSET\SERVICES. Look here for any services that may be associated with the program. Be very careful, because deleting something here could affect other programs.

Clean Out Useless Files

After you've removed a program, don't forget to look for and delete files you created with that application that you'll no longer need. This will free up disk space. Click Start and Search to look for files of a certain type. For instance, type *.**mny** to find all files made with Microsoft Money. ❚❚

BY RACHEL DEROWITSCH

Transfer Your Outlook Express Address Book

A Step-By-Step Guide

When you get a new cell phone, what's one of the first things you do? Program in the names and numbers of the people you call frequently, of course.

Similarly, when you upgrade to a new computer, or just to a bigger hard drive, one of the first files you'll want to import is the one containing the Address Book in Outlook Express. Exporting and importing this information in one computer file beats printing it out and manually re-entering it. At last check, our Address Book had almost 450 contacts. That's a lot of typing.

There are two main ways to transfer your Address Book—either through a CSV (Comma-Separated Values) file, or through a WAB (Windows Address Book) file. We'll walk you through both processes.

Create & Export A CSV File

CSV is a very old file format that hearkens back to the prepersonal-computing days. This file type stores data in columns that are separated by commas, and in rows that are separated by line breaks.

The good thing is that you don't have to do much to create a CSV file. Open OE and click the File menu. Choose Export and Address Book.

In the Address Book Export Tool pane, click Text File (Comma Separated Values) and Export. This opens the CSV Export window, into which you can enter a name for the file. Keep it simple, such as My Address Book.

Use the Browse button to find the location/media to which you want to save the file. For instance, we inserted a CD into our CD drive (the D: drive) and opened that through the Browse function. You could also use a floppy diskette or USB flash drive. Click Save and Next. (*NOTE: If you are saving the CSV file to a blank CD, you might be prompted to use a CD Writing Wizard. Just follow the prompts on the screen and click Finish after the file has been saved.*)

Now you'll have the opportunity to check which fields from the Address Book you want to include in the export. You can include all of them, but if there are some fields, such as Nickname, that you never use, it's OK to leave that unchecked.

Once you've made your selections, click Finish. You'll see a message that says the export process has completed. Click OK, close the Address Book Export Tool window, and retrieve the disc or disk to which you've saved the CSV file.
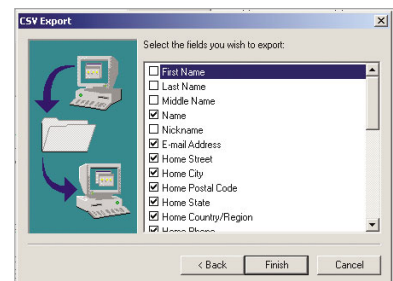
Import The CSV File

Importing the CSV file with your Address Book to the second computer (or to a new hard drive you've installed on the same computer) is almost a matter of retracing the steps you took to create the file.

Insert the disc/disk with the file and open OE. Click on the File menu, choose Import, and then choose Other Address Book. This opens the Address Book Import Tool, which displays a list of programs and file types. Highlight Text File (Comma Separated Values) and click the Import button.

In the CSV Import window, use the Browse button to find the location of the disc/disk containing the CSV file. In our case, that would be the D: drive. Double-click the CSV file in the Open window and then click Next in the CSV Import window.

Just as you did when creating and exporting the CSV file, you'll have the opportunity to select which fields you want to import. The entries in the Text Field should correspond to those in the Address Book Field. For instance, if the entry under Text Field says "First Name," the entry under Address Book Field should say "First Name" too. If a field doesn't line up, click the Change Mapping button. This tool lets you select an Address Book Field to correspond to the highlighted Text Field. You probably won't need to make any

When you export your Address Book by creating a CSV file, you can choose which fields of data to include in the file.
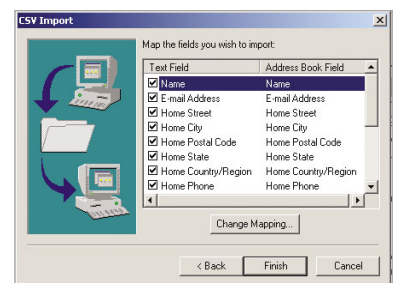
When importing a CSV file, use the Change Mapping function to match up Text Fields with Address Book Fields.

changes, since you are importing an OE Address Book to OE. If you were importing an address book from another program, it might be necessary to realign the text and address book fields. Once you've made your field selections, click Finish and OK.

If you've already to begun to use your new computer (and the OE on that computer), some of the entries from your old Address Book might be duplicates of contacts you've placed in the new Address Book. Therefore, while importing the old book, you may be asked, "Would you like to replace the existing entry with the import entry?"

To save time, click the Yes To All option if you know that all the contacts in the Address Book you are importing are updated.
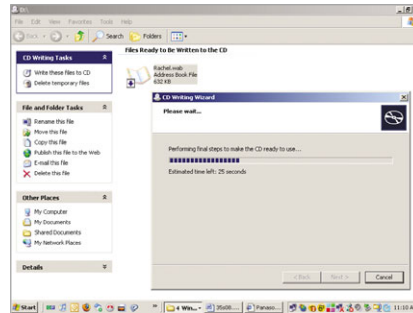
Copy The WAB File

The WAB (Windows Address Book) file contains the address book used by Outlook Express. This file is updated as you add to or change information in your Address Book.

One of the benefits to transferring your Address Book via the WAB file is that this file already exists. You just have to know where to look on your hard drive to find it.

First, let's make sure you can see all the folders and files you need to see. Click Start and My Computer and open the Tools menu. Choose Folder Options and click the View tab. Under Files And Folders, find Hidden Files And Folders. Enable the Show Hidden Files And Folders option and click OK.

Now, find the default location for the WAB file. Double-click your Local Disk icon (the C: drive) in Windows Explorer. Then open the Documents And Settings folder. Next, open the folder labeled with your username and then open the Application Data folder, the Microsoft folder, and the Address Book folder. The path to this folder will look similar to this: C:\Documents and Settings*USERNAME*\Application Data\Microsoft\Address Book.

Transferring your Address Book through a WAB (Windows Address Book) file is simply a matter of writing that file to a disc, and then importing it to your new computer.

If for some reason the WAB file is not here, use the Search tool (click Start, Search, and All Files And Folders) to find it. Or, open the Tools menu in OE, click on Address Book, and choose About Address Book from the Help menu. Next to File you should see the location of the WAB file.

Right-click the WAB file—if there's more than one, choose the one most recently modified—and choose Copy. Again, decide how you'd like to transfer the file (through floppy, flash drive, CD, etc.), navigate to that media or drive, and choose Edit and Paste. If you use a CD, your computer may prompt you to use the CD Writing wizard. Once the WAB has been copied on the disc, you can import the file to OE on the other computer or drive using the email program's import file function we explained earlier. The difference is, you'll want to choose File, Import, Address Book. Find and highlight the WAB file, and click Open. The transfer will occur in a flash.

If The Process Fails . . .

If you encounter any problems in trying to open OE or copy, export, or import your Address Book, the problem might be due to a security update from Microsoft.

Open the Add or Remove Programs tool in Control Panel (click Start and Control Panel). Look for an entry named Windows XP Hotfix 911567. If you have installed this cumulative

security update from Microsoft, then the update might be causing your system to recognize a corruption in your WAB file. This is likely a corruption that occurred over time and did not affect functionality of the address book. Older versions may not recognize this corruption until you install the security update, which examines the address book file closely.

To correct the problem, first uninstall update 911567 using Add Or Remove Programs and restart your PC. Next, make a backup copy of your WAB file and place it in this location: C:\Documents and Settings*USERNAME*\Desktop. Now, click Start and Run, type **cmd** in the Open line, and click OK. At the command prompt, type **Del C:\Documents and Settings\USERNAME\Application Data\Micro soft\Address Book\USERNAME.*** (*NOTE: Don't forget to include the asterisk at the end of that string.*)

Open the Tools menu in OE and click on the Address Book, which now is empty. Choose Import from the File menu and click Address Book. Import the backup copy of the Address Book you placed in C:\Documents and Settings*USERNAME*\Desktop. Now your Address Book has been restored and is ready to transfer to another PC or hard drive. Remember to reinstall security update 911567 from Microsoft Update (update.microsoft.com), and restart your computer.

You may also encounter a problem if the file you are trying to import is read-only. If you see an error message that reads, "An error occurred during the import process. The import process could not be completed," the file is likely read-only. To remove the read-only property from the WAB file, right-click the file and select Properties. Next, click to remove the check from the box next to Read-Only Attribute and then click OK. You should now be able to import the WAB file as described above. ▐▌

BY RACHEL DEROWITSCH

EXAMINING ERRORS

BY JEFF DODD

Problem. A reader reports that he frequently receives a particular error message. The message does not appear to interfere with his ability to use Windows XP.

Error message. Mim.exe - application error. The instruction at "0x74985e5d" referenced memory at "0x00000020". The memory could not be read. Click on OK to terminate the program.

Solution. The file in question—Mim.exe—is associated with the MusicMatch multimedia player software. At one time, MusicMatch was one of the most popular standalone media players on the market. But Yahoo! has since purchased the company and replaced the old software with a new player. We recommend you uninstall your MusicMatch player, reboot your PC, and install the latest edition of Yahoo! Music Jukebox (music.yahoo.com/jukebox) or some other media player in its place. ∎

Problem. Every time a reader turns on his computer, he receives an error message.

Error message. Runner error. Runner file name (Compaq Connections.exe) lacks a "_".

Solution. Compaq Connections is a free service that comes bundled with most Compaq computers for the purpose of delivering content from the computer company to the computer user. Unfortunately, it also is known to generate this pesky error message. The best way to eliminate the error, in our opinion, is to deactivate or uninstall the service.

To deactivate Compaq Connections, you should open the Start menu; burrow through the All Programs, PC Help & Tools, and Compaq Connections folders; and select the deactivate option in the resulting list. You can uninstall the service by opening the Add Or Remove Programs tool (in the Windows Control Panel), selecting Compaq Connections in the list of installed programs, and clicking the corresponding Remove button.

Either way, Compaq Connections will shut down and you will no longer receive tips, offers, and other information from your computer manufacturer. But then, who really wants that kind of unsolicited content anyway? And the error message should be gone for good. ∎
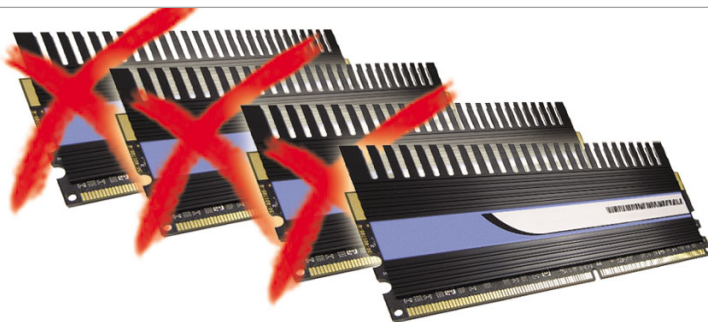
Problem. When a reader boots his PC, he receives an error message. He is able to close the message and access WinXP.

Error message. The amount of system memory has changed.

Solution. You say you haven't made any significant changes to your system recently, which leads us to believe the error is related to a faulty memory component. You should shut down your computer, open the case, locate the memory modules, and make sure they're seated securely in their slots. You should then reboot the computer and see if the error persists.

If it does, you probably have a faulty memory module on your hands. You can try to identify the faulty module by shutting down the computer and going inside once more. This time, you should remove all but one memory module and reboot the computer again. You should repeat this process, testing each memory module individually, until you are unable to reboot the PC. Replacing the faulty memory module should fix the problem. For more information about memory module upgrades, see "Vista-Size Your RAM" in the May 2007 issue of *Smart Computing*. ∎

Problem. When a reader tries to run Disk Defragmenter, she receives an error message that prevents the utility from completing its task. She has tried running Chkdsk to fix drive errors, but the message persists.

Error message. Defragmentation of (C:) has been aborted due to inconsistencies that were detected in the file system. Please run Chkdsk or Scandisk on (C:) to repair these inconsistencies, then run Disk Defragmenter again.

Solution. This error message is most likely caused by errors on the hard drive. To resolve the issue, you should scan the drive for errors again. You can access the drive-scanning utility by opening My Computer, right-clicking the icon for the C: drive, and selecting Properties from the pop-up menu. On the Tools page of the resulting dialog box, you should locate the Error-checking heading and click the corresponding Check Now button. The Check Disk utility will open on-screen. You should select the Automatically Fix File System Errors and Scan For And Attempt Recovery Of Bad Sectors options—these options are not selected by default—and then click the Start button. When the scan is complete, you can try running Disk Defragmenter again. It ought to work this time. ∎
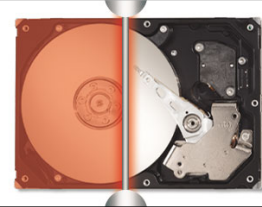
Problem. An error message prevents a reader from opening Windows Defender.

Error message. Application failed to initialize: 0x800106ba. A problem caused Windows Defender service to stop. To start the service, restart your computer or search Help And Support on how to start the service manually.

Solution. Windows Defender is Microsoft's proprietary antispyware utility. It does not come bundled with WinXP but is available as an add-on. In this case, we suspect you can resolve the issue simply by removing the troublesome utility and reinstalling the latest edition of Windows Defender.

To do so, you should open the Add Or Remove Programs utility (in the Control Panel) and locate Windows Defender on the list of installed programs. You should click the corresponding Remove button and follow the on-screen instructions to uninstall the utility.

When the uninstall is complete, you should open your browser and visit the Windows Defender home page at www.microsoft.com/athome/security/spyware/software/default.mspx. You should locate and click the Download It Here button and then follow the on-screen instructions to get the utility. You should upgrade to Internet Explorer 7 while you're at it, if you haven't done so already. ∎

Windows **Defender**
Spyware protection for free.

▸ **DOWNLOAD IT HERE**
2 free support incidents

Problem. After updating his security software, a reader began receiving an error message each time he boots his computer.

Error message. Rthdcpl.exe. Illegal System DLL Relocation. The System DLL User32.dll was relocated in memory. The application will not run properly. The relocation occurred because the DLL C:\Windows\System32\Hhctrl.ocx occupied an address range reserved for Window System DLLs. The Vendor supplying the DLL should be contacted for a new DLL.

Solution. You have encountered a known bug in WinXP. You can resolve the issue by downloading and installing the fix provided by Microsoft. The fix is located at www.microsoft.com/downloads/details.aspx?familyid=74AD4188-3131-429C-8FCB-F7B3B0FD3D86&displaylang=en. You should follow the on-screen instructions to complete the process. ∎

FAST FIXES

Update For Windows Vista (KB933872)

Problem: Microsoft has identified a problem with Windows Vista-based computers in which the system does not maintain its default gateway setting when a user wakes it from sleep mode.

Resolution: Download and install a 278KB update from Microsoft's support site. Go to support.micro soft.com/search and type **KB933872** in the For field and click the Search button. In the resulting list of search results, click the link that reads, "The Default Gateway Setting Is Lost When You Wake A Windows Vista-based Computer From Sleep." On the resulting page, scroll down to the Resolution section and click Download The Update For Windows Vista x86-based Versions (KB93-3872) Package Now. You will need to validate your copy of Windows Vista before you can download the update. To do so, click the Continue button. Follow the on-screen instructions to validate Windows. When you again see the Update For Windows Vista (KB933872) download page, click the Download button. When prompted, choose to save the file to your hard drive. Once the download is complete, locate and double-click the file Windows6.0-KB933872-x86.msu. Follow any instructions you see on the screen. After you have successfully completed the installation, restart your computer.

Update For Windows XP (KB930916)

Problem: Microsoft has discovered an issue in which a third-party driver may prevent a Windows XP system from successfully opening files from an NTFS-formatted (NT file system) drive or partition.

Resolution: Install a 777KB reliability update that is available for download from the Download section of Microsoft's Web site. Go to www.microsoft.com/downloads and type **KB930916** in the Search field and click Go. Click the link that reads, "Update For Windows XP (KB930916)." Microsoft requires that you validate your copy of Windows before you can download this update. Click the Continue button next to Validation Required in order to do so. Follow the instructions on the screen to complete the validation process. Then click Download when you return to the Update For Windows XP (KB930916) download page. When prompted, choose to save the file to your hard drive. Locate the file you just downloaded (Windows XP-KB930916-x86-ENU.exe) and double-click it to launch the installer. Follow the instructions on-screen, and when the installation is complete, restart your computer.

MediaServer 1.1 for JVC DD-3/8 Series Patch

Problem: Previous versions of CyberLink MediaServer were not compatible with the JVC DD-3/8 Series media centers.

Resolution: Go to CyberLink's Web site (www.cyberlink.com) and click the Downloads tab at the top of the page. Scroll down to the Vista Plugins section. It's toward the bottom. Under the Patches column, click the icon made up of three blue hexagons that corresponds with the CyberLink Media Server row. On the resulting Downloads page, click the Click Here link to the right of the Free Upgrade Patch. Then click the red Download button on the right side of the page. When prompted, choose to save the file to your

Desktop. Locate the file you just downloaded (it should be labeled JVC_MediaServer_Patch.v3705) and double-click it to launch the installer. Follow the on-screen instructions to finish installing the patch. After you've installed the patch, restart your computer.

FIX OF THE MONTH

Update For Windows XP (KB925902)

Problem: Microsoft has unveiled a threat in which an attacker may gain control over a Windows XP system.

Resolution: Download the file WindowsXP-KB925902-x86-ENU.exe from Microsoft's Web site and install the file to patch WinXP. To locate the file, go to support.microsoft.com/search and type **KB925902** in the For field and click Search. From the resulting list of search results, click MS07-017: Vulnerability In GDI Could Allow Remote Code Execution. Click the link under IT Professionals to view the Microsoft Security Bulletin. Scroll down to the list of Affected Software and click the Download The Update link next to Microsoft Windows XP Service Pack 2. To download the 1.7MB update, click the Download button. When prompted, choose to save the file to your hard drive. After your computer has downloaded the file, locate it and double-click it to launch the installer. Follow any instructions you see on the screen and then restart your computer when the installation is complete.

Q&A

Hardware

Once you've decided upon the capacity of your external hard drive, the second most important decision will be selecting which connector you plan to use with the new drive.

Q I'm in the market for an external hard drive, but I'm bewildered by the numerous types of connections available for these devices. Some drives even have four connectors. What's the best connection to use?

A Once you've decided upon the capacity of your external hard drive, the second most important decision will be selecting which connector you plan to use with the new drive. For most users, the choices are limited to FireWire, USB, and the newest connector, eSATA (External Serial Advanced Technology Attachment).

FireWire connections (also referred to as IEEE 1394) come in two flavors: FireWire 400 and FireWire 800. FireWire 400 is capable of transferring data at speeds up to 400Mbps (megabits per second) and FireWire 800 is capable of 800Mbps. FireWire 400 uses a different cable and physical connection than FireWire 800, but most FireWire 800 devices include FireWire 400 ports for backward compatibility.

One of the primary advantages of FireWire is a high sustained transfer rate, and minimal CPU usage compared to USB. Unfortunately, FireWire devices haven't seen widespread adoption due to some initial licensing concerns that led vendors to adopt USB. FireWire's greatest success has been with digital video products that require error-free, high-speed transfers.

If your computer doesn't already have a FireWire port, you'll need to purchase a FireWire adapter and install it in your computer case. These can usually be installed in a standard PCI (Peripheral Component Interconnect) slot, or if you're using a notebook computer, in its PCMCIA (Personal Computer Memory Card International Association) slot.

USB connections are much more prevalent than FireWire devices due to the lower licensing cost for computer vendors. USB comes in three flavors; Low Speed, Full Speed, and Hi-Speed. Low Speed USB connections can transfer data at speeds of up to 1.5Mbps and aren't intended for storage devices. Full Speed USB transfers data at speeds of up to 12Mbps and is also too slow for today's systems. Hi-Speed USB (often referred to as USB 2.0) can transfer data at speeds of up to 480Mbps and has been widely adopted by computer manufacturers as an affordable, high-performance connection.

Most computers built within the last several years will have a USB connection, and like FireWire, USB connectors are backward compatible. If your computer doesn't have a USB connector or you need additional ports, you can install a USB adapter card in your computer's PCI slot for a reasonable price.

eSATA is the new kid on the block, and although it offers tremendous performance, its eventual success is unsure. eSATA can transfer data at speeds of up to 2,400Mbps, dwarfing the next-fastest connection, FireWire 800. If motherboard manufacturers begin including eSATA connections in future designs, eSATA has the potential to establish a niche with users requiring the ultimate in performance. Until then, users will need to install a relatively expensive (compared to FireWire and USB) eSATA HBA (host bus adapter) to utilize eSATA devices.

It's important to take a moment and understand what transfer rates actually mean. First, the advertised transfer rates for each connection type are determined under ideal laboratory conditions. Real-world rates will usually be lower. Second, transfer rates are specified in megabits per second, yet data is measured in megabytes. Each byte has 8 bits, so 1 megabyte is equivalent to 8 megabits.

To put this in a real-world context, a CD holds approximately 700 megabytes, or 5,600 megabits of data. Transferring this from an external hard drive using FireWire 400 would take approximately 14 seconds. Using a Hi-Speed USB connection would take 12 seconds, a FireWire 800 connector would take seven

seconds, and an eSATA system would take a hair over two seconds.

Now that we've shown the different connections available, it's time to evaluate where they fit in for most users. If you're an average computer user with a reasonably modern computer, USB connections will suffice for most needs. USB connectors are ubiquitous, and their performance will be adequate as long as you're not doing advanced digital video production. USB uses more processing power than the other connections, but with today's brawny CPUs, this is less of an issue than in prior years.

If you like to edit digital video, or otherwise require high transfer rates, you'll want to use FireWire 400 or 800 connections. The sustained transfer rates supported by these two connections will allow you to transfer digital video from camcorders and other digital devices without dropping data. Although Hi-Speed USB has similar specifications as FireWire 400, its real-world performance is significantly slower. (For more information on USB and FireWire connections see "Battle Of The Busses" on page 76.)

Although eSATA is appealing from a pure performance standpoint, we can't recommend it yet for most home users. Its true niche is for users accessing a large storage array for professional video production or other applications requiring the fastest transfer rates. If the price of eSATA HBAs drop and drive vendors include eSATA ports on their enclosures at minimal cost, eSATA will carve out a niche for desktop storage.

Online

Q I have a small home network (three computers running Windows XP), and I frequently have trouble getting on the Internet. I'm using DSL (Digital Subscriber Line), and when this happens, I have to shut down and restart my DSL router before I can access the Internet. What's going on?

A DSL Internet connections rely upon your phone line for successful operation. Your ISP (Internet service provider) will typically provide you with a DSL router (sometimes referred to as a modem) that connects to your computer and to your phone line.

When you power up your DSL router, it synchronizes with a DSLAM (Digital Subscriber Line Access Multiplexer) maintained by your ISP and located at one of your phone company's central offices. This synchronization process is essential to a successful operation. If the synchronization is disrupted, your connection will drop.

Factors that can disrupt your connection vary from equipment outages with your ISP's DSLAM to line outages and even weather conditions. Although some DSL routers will resynchronize if you lose your connection, the most common method of rectifying an outage is to restart your DSL router.

Periodic outages (less than one per month) aren't that uncommon, though they can be inconvenient. If you're experiencing more frequent outages, you'll want to follow up with your ISP to have them troubleshoot your connection. You'll also want to contact your phone company to have them perform their own troubleshooting routines.

Software

Q I'm curious about Linux. I've read a lot about how it works, but I don't have an extra computer to use, and I can't give up my Windows box.

A Linux is an extremely powerful operating system and is used by both large companies and home users. There are many versions of Linux (referred to as "distributions" or "distros") tailored for different groups of users. Although learning to use Linux can be a challenge, there are many distributions designed with the novice in mind.

Our recommendation would be to try Ubuntu (www.ubuntu.com). Ubuntu is a popular distribution that supports a wide

array of computer gear and includes a variety of useful applications. Since you don't have a spare computer, we recommend using what's known as a LiveCD to dabble with Ubuntu. You can download the Ubuntu LiveCD from help.ubuntu.com/community/LiveCD. You'll need access to a CD burner to copy the downloaded LiveCD file to a blank CD.

LiveCDs are CDs with which you can boot your computer, bypassing Windows completely. Simply insert the LiveCD into your CD drive and then shut down your computer. Then restart your computer, and it will use the LiveCD as its OS (operating system) instead of booting into Windows. The Linux distribution on the LiveCD will detect the hardware in your computer, load the appropriate software drivers, and then start up.

The great advantage of using a LiveCD is that it doesn't alter your existing installation of Windows. When you want to switch back to using Windows, you simply shut down your computer, eject the LiveCD, and then restart your computer. It will boot into its native Windows installation. This lets you play with various Linux distributions before settling on one that best fits your needs.

If after evaluating the various Linux distributions you find that you'd like to continue using Linux alongside your copy of Windows, you have two options. The first is to install Linux in what's known as a dual-boot mode. When you do this, the installation process uses part of the space on your hard drive to store a copy of Linux. When you start your computer, you'll select whether you wish to use Linux or Windows, and your computer will boot into the appropriate OS.

The second option is to use an application like VMware Workstation (www.vmware.com). This provides a virtual environment that "houses" a guest OS. The advantage of this is that you can run both Linux and Windows concurrently instead of having to shut down and reboot when you want to switch between OS. VMware Workstation currently retails for $189, but you can also download a 30-day trial version.

Windows

Q When I worked for a company, the company installed Microsoft Office 2002 SP3 (Service Pack 3) on my personal laptop. The screen shows my username, the company's name, and the software's licence number when I open the Office programs. I was looking through Help and came across a note that says when the licence expires Office will operate in reduced functionality mode. My problem is that I don't work for the company anymore.

I'd like to know how I find out when my licence will expire, whether I can still use MS Office to create new documents when the program is in reduced functionality mode, and how I can change the username so it no longer shows the company's name.

A These are good questions, but the last one presents a bit of a dilemma. We'll answer the easy ones first. Microsoft Office licenses are either perpetual (never expire) or program trial versions (expire after 30 days). Microsoft makes it easy for anyone using a trial version to upgrade to a perpetual licence (go to support.microsoft.com and search for article ID 295547).

Reduced functionality mode does not allow you to create new documents or to modify documents already created. The program becomes more or less a file reader instead of a file creator.

So, if the installation of MS Office on your laptop was done more than 30 days ago and it is still functioning, then you have a perpetual licence that won't expire, unless Office hasn't been activated. If you are getting repeated messages from the Office programs that activation is required, you have only 30 days in which to perform the activation. If you ignore the warning about activation more than 50 times, the same result will occur—the program drops into reduced functionality mode until it receives proper licence activation. To determine if your program has been activated, click Help, Activate Product, from any Office program. If it has been activated, the Activation Wizard will not run and you will

receive a message saying, "The product has already been activated."

Now we come to the dilemma. You may own your laptop, but whether you or the company owns the licence for Microsoft Office is arguable. If the company paid Microsoft for the licence and gave the software to you, that's not a violation of Microsoft's copyright, so long as that licence isn't also being used on another computer at the company. On the other hand, the company could argue that the software was yours to use as a tool (something like a company car) only so long as you were its employee and that it was not a gift.

Be that as it may, it is normally possible to change the dialog box information by contacting Microsoft. According to Microsoft (Knowledge Base Article ID 827291), "To make sure that the information that you provide to Microsoft through the Office Activation Wizard is correct, you can review and update this information by contacting Microsoft at any time. In some Office products, you can use the Office Activation Wizard to do this over the Internet or by telephone. If these options are not available to you, you can update or change any information that you provided by sending a description of the changes that you want made and your Product ID (found in the dialog box that appears when you click the About program name command on the Help menu of any Office program) to the following address. Microsoft will update your information to reflect any corrections or changes that you want made. You must provide your Product ID so that Microsoft can accurately identify your activation record.

Microsoft
Attn: Microsoft Product Activation
One Microsoft Way
Redmond, Washington 98052-6399

Hardware

Q I recently bought an HP Computer with WinXP. I want to save and edit files on CD-RW (rewritable) discs as I did before with floppies. I have been successful in copying files onto disks, but when I open them up, they read, "This document is in use or specified as read-only. You may edit the document, but must save it with a new name." I have tried editing the file and saving it, even changing the file name, but it will not take it and still reads "for read-only." I then right-clicked the file and selected Properties and found that the Read-only box was checked. I unchecked the Read-only box, but I get a message saying, "An error has occurred applying attributes to the file. Access denied." Why are these files getting designated read-only to begin with, and how can I get rid of this read-only attribute?

A Unless they are under the control of software and hardware that is designed to work with them, CD-R (recordable) and CD-RW discs behave as though they were CD-ROM (read-only memory) discs.

So, your hardware may be the problem. Since you can write to a CD, you obviously have a burner that will write to CD-R or CD-RW discs. However, this doesn't mean that you have a CD-RW drive. If you do have a CD-R drive (instead of a CD-RW drive), an ordinary application, such as Microsoft Word, would see the files on the CD-RW disc, but would only see the disc itself as a CD-ROM disc and the files as read-only files. Once the files are written to a disc using a CD-R burner, you cannot modify, move, or erase them and, while they are being copied, their attributes are automatically changed to read-only by the application you use to handle the copying.

If you're certain that you have a CD-RW drive, your software may be causing the problem. You don't note what software you're using to burn the CDs, but some applications have different options that control how information is written to a CD. For example, though your CD is rewritable, there may be an option to treat it as a CD-R. If this option is selected, it could be the cause of your problem.

Files on CD-RW discs can be modified, moved, or erased, but again only if you are using software designed for the job, and you also have a CD burner that can work with CD-RW discs.

Frequently Asked Questions

Answers to users' most common questions about UPS/Battery Backup

> We typically recommend a UPS for all desktop PC users. Many models cost less than $100, and they easily pay for themselves with the first crash they prevent.

FAQ Is a UPS (uninterruptible power supply) really worth the cost? What do I use it for?

Power surges, spikes, brownouts, and even complete power blackouts can cause your PC to reboot or crash unexpectedly. When this occurs, hours of unsaved work are irretrievably lost. In extreme cases, a sudden system interruption can potentially corrupt open system files, resulting in more serious subsequent startup problems.

A UPS prevents data loss and system corruption. It detects the loss of AC (alternating current) and switches over to battery power, which is then "chopped" into AC. The switchover takes only a few milliseconds (thousandths of a second), and the PC never detects the difference. However, PCs demand considerable power, and a UPS can only supply enough energy for a few minutes of operation—just enough for you to save your important work and shut down the system in a proper fashion.

We typically recommend a UPS for all desktop PC users. Many models cost less than $100, and they easily pay for themselves with the first crash they prevent. Busy SOHO (small office/home office) users may use a battery backup on the main PC and a smaller unit to protect their office network equipment, such as the cable modem, broadband router, printer server, and so on.

FAQ How many devices can I connect to the UPS? Can I connect printers also?

In theory, you can connect any number of devices to the UPS as long as you do not overload the unit's power capacity. For instance, the Tripp Lite SMART700 UPS (www.tripplite.com) has a 450-watt power rating. If you exceed this power capacity, you'll trip the unit's internal circuit breaker, and this will immediately crash everything that is connected. Also, the additional load of more devices will shorten the UPS running time.

The rule of thumb is that your UPS should only power the desktop chassis and monitor and maybe one or two very small accessories, such as an external USB hard drive. If you need to power other devices—for example, your broadband equipment—you should use a separate UPS.

Noncritical devices should generally not be connected to backup power; connect them to other surge/spike suppressing outlets on the UPS instead. For example, laser printers or combination fax/scan/print units demand a great deal of power, but there's really no such thing as a mission-critical print job. Protect the laser printer with a surge outlet instead and let it crash with the power loss. You can always restart the print job later, once normal power returns.
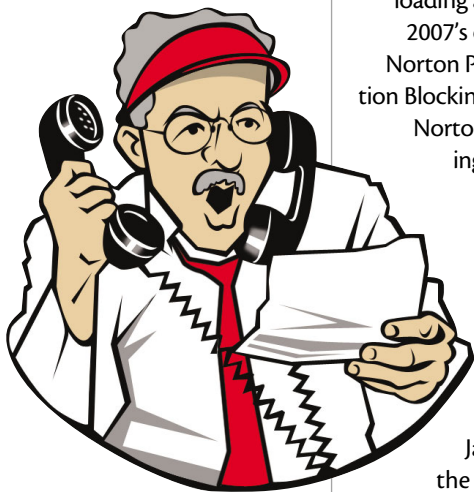
FAQ How long should a UPS last? How can I dispose of it?

A typical UPS is almost never used— maybe a few times per year, depending on your location and the reliability of your utility provider. With light, infrequent use, the UPS unit itself should last indefinitely. However, its internal batteries are another matter. Sealed lead-acid battery packs are very rugged and can withstand the rigors of discharge/recharge cycles for several years, but they don't last forever. Expect about three to five years of use from a typical UPS battery pack. If you notice that the runtime has become extremely short, you may choose to replace the battery pack(s) or the entire UPS.

You can't simply discard a UPS or batteries, because they're an environmental hazard. Buy replacement batteries or UPS devices from vendors that will accept and dispose of your old ones. If your vendor doesn't help you dispose of old batteries, you'll need to pay a local recycler or waste management professional to dispose of old batteries properly. ∎

ACTION EDITOR

AntiSpam Goes AWOL & A Woeful Warranty

Until recently, I had been using Norton Internet Security 2005 to block spam and spyware. When I installed Norton Internet Security 2007, however, I lost the Norton AntiSpam toolbar from Outlook. As a result, I have been inundated with spam. Apparently, Norton AntiSpam was removed from the latest version of Norton Internet Security. Norton AntiSpam was working great for me, but I can't find a new version anywhere. Does Norton have any software that can help me manage my spam problem?

Jack Mayo
Austin, Texas

We called our Symantec contact about Jack's problem and received instructions for downloading and installing Norton Internet Security 2007's optional Add-On Pack, which includes Norton Parental Control, Confidential Information Blocking, Ad Blocking, and Norton AntiSpam. Norton Internet Security 2007 customers using Windows XP or Vista can visit tinyurl .com/fd7yb and click the Download Now button to get the Add-On Pack, free of charge. We forwarded the instructions to Jack, and he notified us that the Add-On Pack had restored his AntiSpam toolbar. Everything seemed to be working. Approximately two weeks later, Jack emailed us again. Since installing the Add-On Pack, Jack had marked more than 2,000 email messages as spam, but he continued to get email from spammers regardless of whether they were blocked or not.

We talked with our Symantec contact about Jack's issue. After several weeks passed with no reply, we contacted Symantec again hoping for an update. When we finally got a response, we were assured that Jack would hear from a Symantec representative very soon. Finally, almost three months later, Jack got a call from a Symantec Technician who helped him resolve the problem. According to Jack, it was a minor software conflict.

Last year, I purchased the ABS Ultimate Sniper gaming PC from ABS Computer Technologies along with an extended on-site repair warranty. Recently, the liquid-cooling pump began leaking. When I called to set up an on-site repair, I was informed that ABS would send me a new pump but that I'd have to install it myself. I called several more times and sent multiple emails to determine why my on-site repair warranty wasn't being honored but have yet to receive a satisfactory answer. Can you help me get my computer repaired?

Name and location withheld

A representative from ABS told us that the customer purchased the on-site service warranty from a company called 2NET. ABS offered 2NET's warranties on their site, but wasn't responsible for honoring them. The customer said he'd never heard of 2NET. Next, we talked to the ABS Service Audit Team. They said ABS had been selling 2NET's warranty services with its computers for a couple of years but discontinued when it became apparent that 2NET was not offering quality support. Unfortunately for our reader, the 2NET services that had already been sold were owned by 2NET, not ABS. Because the customer was still under the ABS one-year standard warranty, they called and helped him install a replacement pump.

A couple months later, the liquid coolant began leaking again and destroyed two video cards, the motherboard, and the processor. By this time, the parts warranty through ABS had expired and 2NET had apparently gone out of business. We asked our ABS contact what they planned to do for ABS customers who had 2NET warranties, and we were told that ABS will provide free phone tech support ($39.99 per year value). Unfortunately, this customer needed parts, not tech support. He had to pay $900 to replace the PC's broken components. In response to customers complaining of similar issues, an ABS Forums moderator recommended seeking legal advice. The company is also taking legal action against 2NET.

Not-So-Super Stories

Superhero tales always claim to inspire us to loftier ambitions. How do we make the world a better place? How can you combat forces of darkness? For that matter, where can you get a bulletproof cape and a cool spider suit? I can't help you with the last questions, or even do much with the first two. In my own (decidedly nonheroic) way, though, I can help you riddle through the dastardly web of browser problems. I've found that keeping your browser clear of corruption is easier than fighting criminal masterminds. Just follow these three steps to begin troubleshooting Internet Explorer problems. It's not much, but, after all, with little power comes little responsibility.

Clear The Cache

Even the most well-equipped hero needs to clear out some junk occasionally. As you surf around, your browser collects little pieces of the Web from every site you visit. Internet Explorer calls this storage area Temporary Internet Files, though I've never found anything temporary about them. The goal is to make browsing faster by pulling files from the hard drive on return visits.

Leaving security and privacy issues aside for the moment, a browser's cache can introduce all sorts of performance problems. For one thing, cached files often become outdated or corrupt. You'll just keep loading bad, obsolete, or malfunctioning files, though quickly, rather than getting fresh, functioning content from the site. And when the cache fills up, it can actually take IE more time to find and retrieve the cached file than it would to download a fresh version.

If you run into pages that don't load properly or experience unusual slowness, clearing your browser cache should be your first step. In IE 6.0 (which most Windows XP users have), open the Tools menu and select Internet Options. From the General tab, click the Delete Files button in the Temporary Internet Files section and click OK. In IE 7.0 (Vista's native browser), open Tools, choose Internet Options, click the Delete button under the Browsing History section, and choose which types of files to remove. In either browser, avoid future problems by clicking the Settings button and limiting the cache's disk space to 64MB or less.

Check Privacy & Security

I was working with someone the other week who insisted that the page I was directing her to wouldn't load, no matter what she did. We stepped through to the same point, clicked the same link, and—voila—nothing. In the end, her browser was blocking pop-up windows and active content from the site. I didn't want her to be besieged with nasty advertisements or make her vulnerable to online villains, thus making myself an antihero. Thankfully, IE provides the ability to specify some security and privacy permissions on a per-site basis. Keep an eye out for the yellow Information Bar that appears when IE blocks something. You can often choose to allow the action across an entire trusted site. You can also visit the Security or Privacy tabs in the Internet Options dialog box (again, accessed from the Tools menu) to make sure your browser handles threats (or perceived threats) exactly how you want.
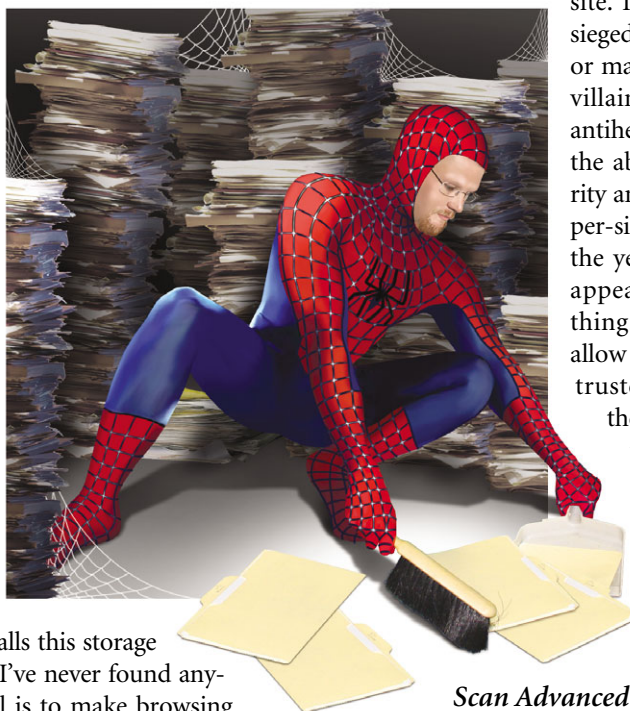
Scan Advanced Settings

Advanced, yet another tab in IE's Internet Options dialog box, isn't just for those sporting superpower user credentials. I once had to rescue my brother from an online experience devoid of all images. Whether or not someone was trying to send a message about his usual picture choices, it's no fun trying to surf the Web without button images or navigation icons. We discovered that his Show Pictures option was disabled. You'll occasionally run into similar situations where multimedia content or CSS (Cascading Style Sheets) aren't working. The checkboxes in Advanced Options are one of the first places you should look.

You don't have to be made of steel or leap tall servers in a single bound to rescue people from sticky Web situations. These measures sound simple, and they are, but they're steps no one thinks to take until something goes wrong. At that time of need, you'll be able to step up and be the hero—to yourself, if no one else. ▮▮

BY GREGORY ANDERSON

Gregory Anderson *is a regular contributor to* Smart Computing *and several other technology publications. He keeps a sharp eye (with the help of thick glasses) on computing trends and enjoys working with geeks of all stripes—most of the time. Reach Greg to brag about your browsing at* **gregory-anderson@smartcomputing.com**.

Dial I For Irritating

There's nothing quite like a nice, spine-chilling, scary movie, is there? I don't mean the cheesy slash-fests we so often see these days; I'm talking about those truly classic suspense films, the kind that scared you without having to resort to gore and splatter. Remember "Dial M for Murder?" In that one, the tension builds relentlessly as the audience waits and waits for the telephone to ring; we know that the ring is the signal for Anthony Dawson to leap from his hiding place and murder poor Grace Kelly as she steps out of the shower to answer the phone. When the phone rings—Brrrrrrrnnnng!—the soon-to-be Princess of Monaco goes to the phone, Dawson leaps, the audience startles, and we all enjoy another satisfyingly creepy Hitchcock moment.

Of course, that was back in the days when telephones actually *rang*. They no longer do that. Now they peep, chirp, chortle, chuckle, zap, zing, ding, sing, moo, snort, sneeze. . . . Well, you get the idea. They do pretty much everything *except* ring.

In fact, it's apparently not enough that a phone ring, or even snort, beep, or chirp. These days, people are downloading actual *song* snippets as ringtones. As a result, what looks like a perfectly harmless, normal cell phone can abruptly burst forth with a high-fidelity (and painfully accurate) note-for-note rendition of the Bee Gees' "Stayin' Alive." It's as if your telephone were suddenly possessed by an evil spirit, assuming that an evil spirit would wear a lime-green, polyester leisure suit.

The sale of downloadable ringtones, a product that didn't exist a few years ago, is now a $4 billion industry. Seemingly everyone under the age of 30 has a dozen or more ringtones set up on his phone, each one carefully selected to signal that a specific person is calling. So, when your phone "rings" (a term that's becoming increasingly inaccurate), you know who's calling *before you actually look at the phone*! Isn't that great?! What a wonderful way to avoid the exhausting labor of actually having to turn your head to see the Caller I.D. notice displayed on your screen! This way, when your phone suddenly blurts out the refrain to the Commodores' "Brick House," you know right away that your wife is on the line. (What this says about your relationship with your wife, of course, is a subject best left to health-care professionals to determine.) And when your cellular phone suddenly starts spewing (in this case, I believe that's the correct technical term) ABBA's "Dancing Queen," you'll know even before you answer the phone that it's your somewhat peculiar cousin Warren calling.

Now, I have to admit that I've thought about going over to the telephonic Dark Side. I could set up different ringtones for everyone who calls my cell phone. This shouldn't take that long, actually, since not that many people call me: there's my daughter Amy, who insists that she'll never live in Nebraska (maybe Carole King's "So Far Away"); my wife (possibly Brad Paisley's sappy-but-beautiful "She's Everything To Me"); my physician-friend Dave ("Doctor, Doctor" by Robert Palmer, of course); my insurance agent (The Coasters singing "The Slime"); the plumber (Bobby Darin's "Splish Splash!"); and Dale, my accountant (the Beatles' "Tax Man," naturally).

If I were brave enough, I think I'd add John Mellencamp's "The Authority Song" ("I fight authority; authority always wins . . .") as a ringtone to let me know that my boss is calling, but I'm not quite brave enough to do that. (I know what you're thinking. "He's such a spineless wimp!" Yes, I am. But I'd like to point out that I'm an *employed* spineless wimp.)

As much as I dislike them, I have to admit that ringtones have made possible some very interesting telephone-based relationship games. The head of our art department surreptitiously programmed her husband's phone to play the "Halleluiah Chorus" whenever she calls him, a sly bit of high-tech craftiness that makes me smile whenever I think of it. It also makes me wonder: What song would your spouse put on *your* phone to indicate that he or she was calling? And then there's an even more interesting question: What song do you suppose is the one most often used to signify that an *ex*-spouse is calling? (We could up the difficulty level by adding a stipulation: No "Wizard of Oz" songs allowed.) ▌▌

Rod Scher *is a former software developer and a recovering English teacher. He's also the publication editor of* Smart Computing *and will no doubt continue in that position until such time as his boss reads this column. Contact Rod at* **rod-scher@smartcomputing.com.**

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Maintenance

Though we wouldn't suggest adding oil to your computer, PCs need regular maintenance just like cars. Read up on the basics in the Preventive & Regular Maintenance section of our Tech Support Center.

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Set A Home Page

To set a Web page as your home page, first go to the Web page that you'd like to use. Internet Explorer users, click Tools in the Menu bar followed by Internet Options. Click the Use Current button in the Home Page section. Netscape users, click Edit, Preferences, and then Navigator. You'll see a Home Page section in the middle of the dialog box. Click the Use Current Page button to set your home page.